Clean Air Madison
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October 21, 2004

U.S. Environmental Protection Agency
Office of Civil Rights
Mail Code 1201A
1200 Pennsylvania Ave NW
Washington, D.C. 20460

Subject: Environmental Justice and Title VI Complaint
Issuance of Air Pollution Control Permit #03-POY-328
by the Wisconsin Department of Natural Resources

On behalf of residents of the Schenk-Atwood neighborhood and students at Lowell Elementary School in Madison, Wisconsin, Clean Air Madison is filing a complaint under 40 CFR Part 7. We believe the Wisconsin Department of Natural Resources has issued Air Pollution Control Permit #03-POY-328 to the Madison-Kipp Corporation in violation of the Environmental Justice Program and Title VI of the Civil Rights Act of 1964. We request that USEPA investigate this complaint and determine if further environmental protection measures are warranted.

We have enclosed the following documents to support this complaint:

- Attachment A - Title VI Complaint
- Attachment B - Air Permit #03-POY-328
- Attachment C - CAM Comments #1
- Attachment D - CAM Comments #2
- Attachment E - WDNR Response to Public Comments
- Attachment F - Lowell Elementary School Location

Should you or other USEPA staff require further information to evaluate this complaint, don't hesitate to contact us. Any questions should be directed to myself at (608) 246-0697, or our technical contact, [redacted].

Sincerely,

CLEAN AIR MADISON

Vicky Hestad

Vicky Hestad, Director

Enclosure

cc: A. Walts - USEPA Region V

ATTACHMENT A

ENVIRONMENTAL JUSTICE AND TITLE VI COMPLAINT ISSUANCE OF AIR POLLUTION CONTROL PERMIT #03-POY-328 BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

INTRODUCTION

On behalf of residents of the Schenk-Atwood neighborhood and students at Lowell Elementary School in Madison, Wisconsin, Clean Air Madison or CAM is filing a complaint under 40 CFR Part 7. We believe the Wisconsin Department of Natural Resources (WDNR) has issued issued Air Permit #03-POY-328 to the Madison-Kipp Corporation (MKC) in violation of the Environmental Justice Program and Title VI of the Civil Rights Act of 1964. We request that USEPA investigate this complaint and determine if further environmental protection measures are warranted.

The Environmental Justice Program requires fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to implementation of environmental laws. The east side of Madison, Wisconsin is home to the many low income and minority families. The east side of Madison also has the burden of dealing with the environmental impacts of the majority of the city's industries and sources of pollution.

For the past 15 years, Schenk-Atwood neighborhood residents have seen a continual increase in the air pollution, noise, odors and hazardous materials created by the Madison-Kipp foundries on Atwood and Fair Oaks Avenues. From 1995 to 2002, particulate emissions increased 10-fold. Air pollution control requirements are over 30 years old, so no air pollution equipment is used. Hundreds of complaints have been filed with the Madison Health Department and WDNR. Countless hours have been spent by residents contacting government and company officials, attending public hearings, and trying to get Kipp to be a more responsible neighbor. After all the effort and complaints, there have been no improvements.

During issuance of the most recent air pollution permit to MKC, CAM requested that WDNR strengthen the air pollution control requirements of the MKC project. Some of these improvements included the following:

- Require the use of state-of-the-art air pollution control equipment and methods;
- Require regular compliance testing especially since the last test measured a violation;
- Require continuous emissions monitoring to assure compliance at all times;
- Use accurate computer modeling methods - rather than consider the area flat and rural, account for multi-story buildings and the 3rd story air intake vents on Lowell School;
- Verify compliance with the newest and most protective air quality standard for $PM_{2.5}$;
- Hold an evening public hearing in the neighborhood accessible to working residents; and,
- Adopt an agreement with the neighborhood to further reduce pollution and risks.

The WDNR ignored neighborhood resident requests for greater scrutiny and protection. However, the same requirements were incorporated into another project located in a more affluent, less diverse section of the city - the Madison Gas & Electric Company West Campus Generating Station.

This environmental justice complaint provides supporting information including: a description of the MKC project; comments submitted by CAM and neighborhood residents; WDNR response to comments; a description of surrounding neighborhood; and, identification of relevant environmental justice issues and the improvements which should have been required by the WDNR.

This complaint is being filed with the support of the Schenk/Atwood/Starkweather/Yahara Neighborhood Association.

BACKGROUND

On April 26, 2004, the WDNR issued Air Permit #03-POY-328 to the Madison-Kipp Corporation (MKC), an aluminum foundry and die caster in Madison, Wisconsin. (Attachment B). This permit was necessary because compliance tests in the fall of 2003 had shown particulate matter (PM) emissions from the two aluminum melting furnaces to be in violation of existing air pollution control permits. In response to the violation, the WDNR issued Permit #03-POY-328 and increased the allowable PM emissions from the two furnaces by 61 tons per year.

During the public comment period and public hearing for the draft permit, CAM submitted detailed comments on behalf of neighborhood residents. These are provided as Attachments C and D. CAM proposed that the EJ Program demanded:

1. a higher level of regulatory review and air pollution control;
2. a more thorough evaluation of air quality impacts; and,
3. more extensive monitoring and testing requirements.

Each of these requirements was well within the regulatory authority of the WDNR. However, the WDNR made no changes to its either the permit requirements or its supporting analyses as a result of the EJ Program. The WDNR concluded that the EJ program only required adequate opportunity for public comment and no requirement for additional environmental protection. A copy of the WDNR response to public comments is provided as Attachment E.

PROJECT LOCATION

EJ is relevant to this project because of its location on the eastside of Madison. The east side of Madison, Wisconsin is home to the many low income and minority families. Lowell Elementary School, located only 1 block from the MKC foundry, participates in the federal Title 1 education program, receiving funds to ensure that poor and educationally disadvantaged students have additional support to help them meet high academic standards.

The east side of Madison also has the burden of dealing with the environmental impacts of the majority of the city's industries and sources of pollution. In addition to the Madison-Kipp foundry, other industries and pollution sources impacting the neighborhood include the following:

- Dane County Regional Airport has its main flight path over the neighborhood surrounding MKC and receives the majority of its noise complaints from this neighborhood; Dane County has refused all proposals offered by neighborhood residents through the SASY Neighborhood Association to implement additional noise control methods, install a noise

monitoring system, or conduct an audit of the noise control program.

- A recent WDNR odor survey demonstrated that the neighborhood activities were adversely affected by odors from MKC, but also by the Oscar Meyer Foods Corporation meat smoking operations and Webcrafters, Inc. web offset printing operations.

- The Madison Gas & Electric Company Blount Street Generating Station is located on the eastside of Madison. This is the largest air pollution source in the city.

- Other east side industries reporting to the national toxics release inventory include Royster-Clark Inc.; Berntsen Brass & Aluminum Foundry; Mautz Paint Company; Rayovac Corporation; Rhodia Inc.; Safety-Kleen Systems; and Vendura Industries.

- Dane County has proposed additional industrial development on land adjacent to the airport.

- During the 1990's, Dane County allowed Wisconsin & Southern Railroad to move its train switching operations to the east side of Madison, dramatically increasing freight train noise, traffic disruptions and safety hazards to east side residents.

- The neighborhood is a major thoroughfare for commuter traffic flowing from growing bedroom communities to downtown Madison offices.

LOWELL ELEMENTARY SCHOOL

An important consideration in this complaint is the presence of Lowell Elementary School located one block from the Madison-Kipp. Lowell is a Title I school where more than 50% of the students are from low income households. Students from this school are already subject to excessive pollution both at school and at home.

A map with the school location and attendance area is provided as Attachment F. This also shows the location of the two MKC foundries on Atwood Avenue and Fair Oaks Avenue, in relation to the school.

Figure 1 shows a view from the roof top of Lowell towards Madison-Kipp. This shows the two 100 foot stacks used to exhaust furnace operations at the foundry. To the left, some of the foundry roof vents can be seen. These exhaust foundry die casting operations and are level if not lower than the fresh air intake vents on top of the Lowell roof. During the comment period on the latest air pollution permit at Madison-Kipp, the WDNR refused to consider air pollutant concentrations at elevated locations surrounding the foundry such as the air intake vents on the Lowell roof and apartment balconies that can also be seen in Figure 1.

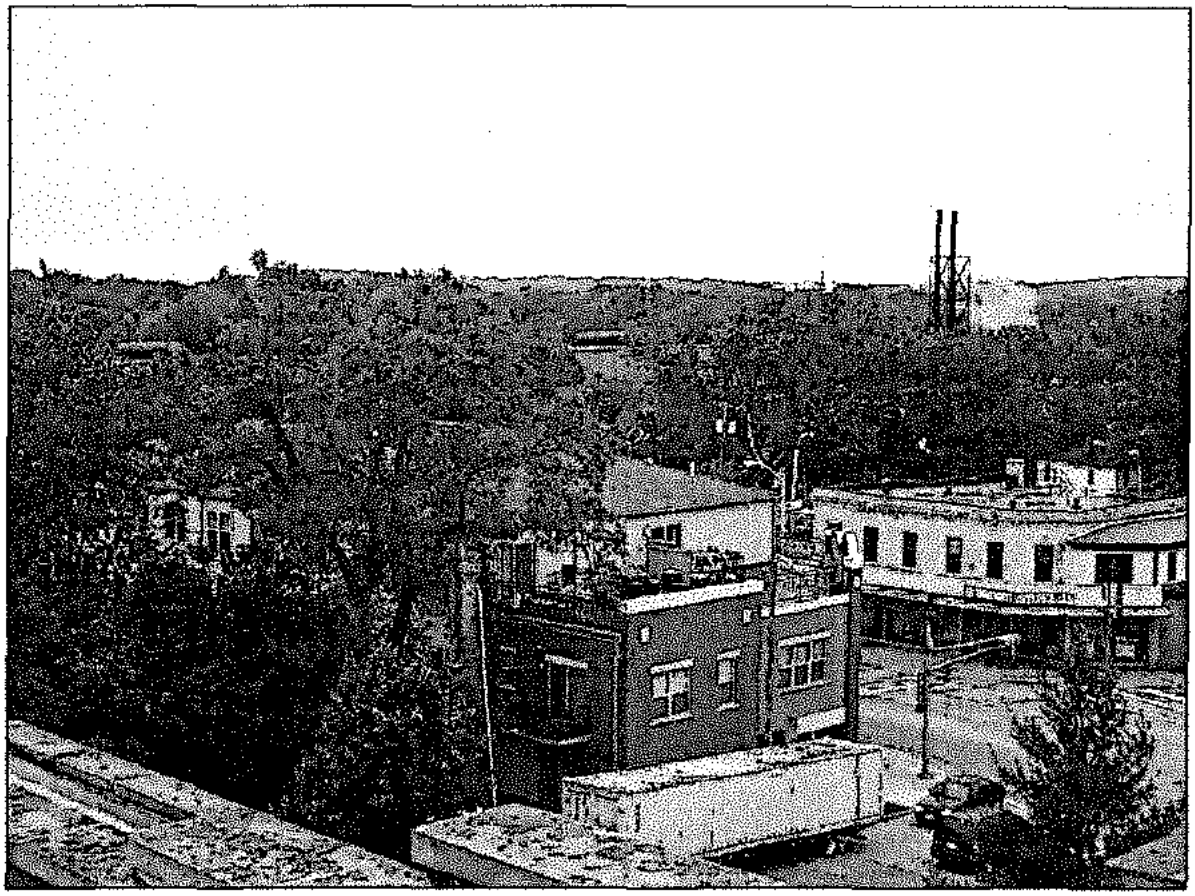

Figure 1 - View from the Roof of Lowell Elementary School towards Madison-Kipp

Besides discharges from Madison-Kipp Corporation, located one block to the west, the school and nearby student homes are located along Atwood Avenue and East Washington Avenue, significant transportation corridors in Madison, and the flight path of the main runway at the Dane County Regional Airport.

According to the recent report by the Sierra Club, Highway Health Hazards, *"a significant body of scientific evidence is emerging that links pollution from motor vehicles to a range of human health problems including asthma, lung cancer and premature death."* A copy of this report is available at the following internet address:

http://www.sierraclub.org/sprawl/report04_highwayhealth/

The release of this report was announced by Brett Hulsey, Sierra Club Midwest senior representative and a Dane County Board supervisor. *"Communities living close to highways are at higher risk for asthma, heart attacks, lung cancer and other health problems"*, Hulsey said in a statement released at a July 28, 2004 press conference at East High School. The school was chosen as an example of a site where large concentrations of young people can be affected by high amounts of air pollution coming from the thick traffic on East Washington Avenue, which runs directly in front of the school Students from Lowell Elementary School will eventually attend East High School.

As noted, Lowell Elementary School, as well as the school attendance area, is located on the flight path of the main runway at the Dane County Regional Airport. While the airport noise control strategy aims to comply with the FAA 24-hour average noise standard of 65 db, overhead planes easily exceed the city's instantaneous noise standard of 65 db. If every flight from the airport were subject to the city's noise ordinance, annual fines would exceed $65 million.

Colleen F. Moore is a professor in the Psychology Department of the University of Wisconsin and author of *Silent Scourge: Children, Pollution and Why Scientists Disagree.* On April 8, 2004 she presented her concerns over airport noise on surrounding children to the noise subcommittee of the Dane County Regional Airport. Her comments were as follows:

I. Children's reading scores are lower in neighborhoods and schools with high aircraft noise compared to lower noise neighborhoods of comparable socio-economic background. Reading is exceedingly important because poor early reading can cascade into poor overall academic performance over the elementary years. Noise impacts on reading scores have been found in the US, Britain, and Germany. Also, school teachers working in high noise schools sometimes have to entirely stop a lesson because of aircraft flyovers.

II. Children in high noise neighborhoods show higher blood pressure and higher stress hormones compared to those from lower noise neighborhoods of comparable socio-economic background. This finding comes from studies near LA International Airport and also from the Munich airport studies.

III. The Health Council of the Netherlands reviewed research in 1999 and concluded that, in addition to having a negative effect on children's school performance, that aircraft noise is also linked to hypertension, ischemic heart disease, sleep disturbance, and negative mood as a result of sleep disruption in adults. The United Kingdom Institute for Environment and Health drew similar conclusions about noise and health in 1997.

IV. The FAA's standard way of assessing the community impact of noise is inadequate. The FAA uses the "Schultz curve" for predicting noise annoyance from noise exposure. From the Schultz curve, the FAA has concluded that a cutoff of DNL 65 is equivalent to a 'noise impact'. The Schultz curve fails to separate different sources of transportation noise, fails to consider the fact that speech is disrupted at noise levels below 65, fails to consider peak noise events, and totally omits the health effects I have listed above in items I, II and III except for sleep disturbance. The Schultz curve has been rejected as inadequate by the best recent research on noise annoyance. The latest comprehensive meta-analysis of noise annoyance (published in 1998) has concluded that the FAA's Schultz curve underestimates noise annoyance by approximately 10 dB.

The implication of all of this is that Dane County should seek to implement operational changes at the airport that will minimize the impacts of noise on the health of residents.

COMPARISON WITH RECENT AIR PERMIT ISSUANCE

On September 17, 2003, the WDNR issued Permit #02-RV-098 for the Madison Gas & Electric Company (MG&E) West Campus Generating Facility. The permit and supporting documents for this project are available at the WDNR air permit web site:

http://www.dnr.state.wi.us/org/aw/air/permits/APM_toc.htm

The permit issued to MG&E requires the facility to utilize state-of-the-art air pollution control equipment; conduct initial and future compliance stack tests for PM, SO_2, NO_x, CO, VOC, H_2SO_4, and NH_4; and, install continuous emission monitoring equipment for NO_x and CO. During the comment period for the MKC permit, CAM requested that the WDNR require state-of-the-art emission control equipment, compliance testing, and continuous emissions monitoring, but no controls, testing or monitoring was required by the WDNR.

Since the discharges from MKC are uncontrolled, issuance of the air pollution permit was dependent on compliance with air quality standards, which required a dispersion modeling analysis. During the comment period on the draft permit, CAM requested that WDNR staff conduct a state-of-the-art modeling analysis to assure compliance with air standards and protection of nearby students and residents. For the MG&E project, the WDNR conducted a more accurate analysis by considering terrain elevations and discharges from the facility cooling towers. Despite a request by CAM to incorporate these modeling features and others to improve the accuracy of the analysis, WDNR refused to use either of these procedures for the MKC permit.

The modeling analysis for the MG&E permit predicted a maximum 24-hour average TSP impact of 19 ug/m^3. The modeling analysis for the MKC permit predicted a maximum 24-hour average TSP impact of 70 ug/m^3 such that the total impact including background would barely comply with air quality standards. During the public comment period, CAM explained that a more accurate modeling analysis would increase the predicted impacts due to the MKC discharges so the foundry would not comply with air quality standards.

For the MG&E project, the WDNR conducted an evaluation of compliance with the more protective $PM_{2.5}$ air quality standard which was promulgated in 1997. Despite a request by CAM, WDNR refused to conduct a similar analysis for the MKC permit. The MG&E environmental impact statement executive summary which includes the results of the $PM_{2.5}$ modeling analysis is available at the following web site:

http://psc.wi.gov/electric/cases/uwcogen/document/execsumm.pdf

The air quality modeling conducted by the WDNR for the Madison-Kipp project showed that emissions from the foundry alone, without any consideration of background concentration, would exceed the air quality standard for $PM_{2.5}$.

Lastly, Madison Gas & Electric Company negotiated a good neighbor agreement with the surrounding neighborhood where it proposed to implement additional air pollution control measures beyond those required by the WDNR and comply with upcoming city noise abatement ordinance. The good neighbor agreement is available at the Regent Neighborhood Association web site at:

http://www.regentneighborhood.org/RNAMOUFinal6-3-03.html

In contrast, MKC has refused to meet with either surrounding neighbors or the SASY Neighborhood Association, and the city's mayor has been unable to help negotiate any sort of agreement with the company. The MKC foundry does not comply with the city noise abatement ordinance.

While Lowell Elementary School is located near the MKC facility, Randall Elementary School is located near the MG&E project. Madison Metropolitan School District provides a comparison of the minority population in the attendance areas of each school at the following web site:

http://www.madison.k12.wi.us/re/MMSD.htm

Attendance area figures are for 2002. These shows the Lowell Elementary area with 31 to 45% minority students, and the Randall Elementary area with 0 to 15% minority students.

Recent attendance data is available at the following school district web site:

http://www.madison.k12.wi.us/topics/stats/

For 2004, Lowell with a minority population of 52% and Randall has a minority population of 31%. Randall is paired with Lincoln Elementary to assure a more diverse school population. While the difference in the minority population may not be the only reason for the difference in the regulatory effort taken by the WDNR on the MKC and MG&E air pollution permits, it clearly indicates that the EJ program was applicable to the MKC project.

PROPOSED IMPROVEMENTS

In its EJ guidance, USEPA makes suggestions for improvements to be undertaken during the issuance of permits. As described in CAM comments submitted prior to issuance of Permit #03-POY-328, actions the WDNR should have undertaken to comply with the EJ program are as follows:

EJ Recommendation 1. - Monitoring.

Include permit conditions that set additional monitoring requirements, and require the permitted facility to make monitoring data more readily accessible to the impacted community.

The permit issued to Madison-Kipp includes no compliance test requirements. It should have included testing and monitoring procedures which will verify continued compliance with permit emission limitations and the assumptions used as a basis for issuance of the operation permit. The WDNR has the discretion to require more frequent stack testing and use of continuous emissions monitoring.

The last compliance test in the fall of 2003 found the company in violation of its PM emission limitations. Additional testing should have been required when Permit #03-POY-328 was issued. Continuous emission monitors are readily available for opacity and hydrogen chloride to avoid the periodic excess emissions which can be seen being released from the foundry. Every effort should be taken to assure failsafe mechanisms and procedures are required by the permit to verify continuous compliance by MKC.

EJ Recommendation 2. - Risk reduction.

Any additional steps which will reduce risk from a permitted activity are appropriate, where the impacted population already faces a heightened risk of harm to human health and the environment.

Include improved or more stringent standard operating procedures to reduce releases and exposures.

Regulatory discretion should be made to encourage MKC to use available air pollution control technologies and methods to reduce its air pollution discharges in the surrounding neighborhood. Similar aluminum furnaces in the secondary aluminum processing industry are required to control their particulate, hydrogen chloride and dioxin and furan emissions. Similar control technology should be used by MKC.

Since discharges from MKC are uncontrolled, emissions are limited by the air quality standards. State of the art dispersion modeling procedures should be used to assure protection of the air quality standards. For the draft permit, the DNR used simplistic modeling procedures. In the public comments submitted by CAM, it was noted that the WDNR analysis failed to consider the urban setting of MKC, the differences in elevation between MKC and the surrounding neighborhood, the close proximity of homes with backyards abutting the foundry buildings, and sensitive receptors like Lowell Elementary School. Lowell is located on an elevated site and has its fresh air intakes on the roof of the school building where pollutant concentrations are higher than at ground level. The DNR has the authority and skills to require the use of more precise modeling procedures.

The modeling analysis supporting the issuance of the permit should be improved. Prior to conducting this analysis, there needs to be a comprehensive survey of emissions sources at the MKC foundry and their release points. This will assure that all locations of air pollutant discharges are included in the analysis. While stacks may exhaust the majority of the foundry emissions, releases through windows, doors and other building opening will immediately expose neighbors living adjacent to the foundry. While the facility permit issued to MKC requires that doors and windows remain closed to contain discharges, they are frequently seen to be open. The new modeling analysis should incorporate more accurate procedures to assure the maximum concentrations are predicted. If the predictions are more accurate, dispersion becomes a less viable option compared to the use of control equipment or control methods.

The modeling analysis should have addressed compliance with the 1997 national ambient air quality standard for $PM_{2.5}$. The WDNR modeling analysis demonstrated the new NAAQS would be violated by the foundry. There already is a precedent where the WDNR requested prior projects to voluntarily evaluate compliance with the new NAAQS, including the MG&E project discussed earlier.

The 1999 odor survey conducted by the WDNR determined that many residents considered their outdoor activities affected by the odors from MKC. The WDNR should use its authority and discretion to conclude that MKC is a cause of objectionable odors within the neighborhood and require corrective action to reduce exposure to all sources of odors from the MKC foundry.

EJ Recommendation 3. - Release preparedness: Additional requirements for emergency preparedness should be used to address the risk from an accidental or unpermitted release.

The Section 112(r) Risk Management Plan for MKC chlorine storage concludes that an accidental release of chlorine would affect over 16,000 people. To warn residents of an accidental release, MKC proposes to contact the 911 emergency telephone number. This warning method is inadequate

and does not provide adequate protection of neighborhood and city residents. This is an especially dangerous situation for residents which live close to storage and handling areas. The RMP submitted by MKC should be improved.

All chlorine storage and handling areas should be equipped with monitoring and warning equipment to detect releases, and immediately warn the neighborhood of the accident. It should not be left to the discretion of MKC to decide if local authorities or surrounding neighbors should be warned. If the permit incorporates sufficient control and compliance demonstration methods to assure the protection of the surrounding neighborhood, it will reflect the true cost of the air pollution discharges and provide incentives for MKC to find cleaner and safer manufacturing alternatives. Everyone would benefit from this change to less polluting production methods.

Attachment B
Air Permit #03-POY-328

AIR POLLUTION CONTROL CONSTRUCTION PERMIT

EI FACILITY NO: 113014220 PERMIT NO.: 03-POY-328

STACK NOS. S16, S17 SOURCE NOS. P35, P36

This Construction Permit Expires Eighteen (18) Months From the Date of Issuance or When the Operation Permit is Issued for the Emission Units Included in This Permit, Whichever Comes First.

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Madison-Kipp Corp.

Street Address: 201 Waubesa St.,
Madison, Dane County, Wisconsin

Responsible Official, & Title: Joe Wodjak, President & CEO

is authorized to modify and initially operate two aluminum melting furnaces described in the plans and specifications dated November 20, 2003 through December 19, 2003 in conformity with the conditions herein.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in Parts I and II hereof.

Dated at Madison, Wisconsin 04/26/2004

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By /s/ Lloyd Eagan
Lloyd Eagan, Director
Bureau of Air Management

PART I
APPLICABLE EMISSION LIMITATIONS AND REQUIREMENTS

A. S17, P35- RCI 1 aluminum melting furnace with chlorine demagging
S16, P36 - RCI 2 aluminum melting furnace with chlorine demagging
Limitations are for each furnace (unless noted otherwise)

POLLUTANT	a. LIMITATIONS	b. COMPLIANCE DEMONSTRATION	c. REFERENCE TEST METHODS, RECORDKEEPING AND MONITORING REQUIREMENTS
1. Particulate matter emissions	(1) The most restrictive of the following. (a) 0.3 pounds per 1000 pounds of exhaust gas; (b) $E = 3.59P^{0.62}$ where E is the allowable emissions (pounds per hour) and P is the process weight rate in tons per hour, and (c) 8.5 pound per hour.[1] [s. NR 415.05(1)(g) and 415.05(2), Wis. Adm. Code, and s. 285.65(3), Wis. Stats.] (2) Stack Parameters for Each of S16 and S17 (a) The height of the stack shall be at least 100.0 feet above ground level (b) The inside diameter at the outlet of the stack may not exceed 2.6 feet. (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases [ss. 285.65(3) and 285.63(1)(b), Wis. Stats.][2] (3)Total facility chlorine usage for the RCI1 and RCI 2 combined may not exceed 63 pounds per hour. [s. 285.65(4), Wis. Stats]	(1) The permittee shall only fire natural gas and propane as fuels in each furnace [s. NR 407.09(1)(c)1.b., Wis. Adm. Code and ss. 285.65(3) and 285.63(1)(a), Wis. Stats.] (2) (a)Only clean material including aluminum T-bar, sow, ingot, billet, pig, alloying materials, customer returns and Madison-Kipp manufacturing process scrap may be charged to this furnace. (b) Purchased scrap may not be melted in this furnace. [s. 285.65(4), Wis. Stats.]	(1) Whenever emission testing is required by the Department, compliance with total suspended particulate matter emission limits shall be determined by U.S. EPA Method 5 including backhalf. [s. NR 439.06(1), Wis. Adm. Code] (2) The permittee shall retain on site, plans and specifications that indicate the furnace fuel usage design capabilities. [s. NR 439.04(1)(d), Wis. Adm. Code] (3) The permittee shall keep and maintain technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code] (4) To demonstrate compliance with the ambient air quality standard for this pollutant the permittee shall (a) maintain a matrix containing corresponding stack parameters and emission rates for all significant sources at the facility, and (b) record the operating scenario for each day, and (c) record the daily throughput or maximum throughput (ton) for each source in the matrix, and (d) record the most recent emission factor (lb/ton alummum), and (e) record the allowable emission rate from the matrix which shows compliance with the particulate limitation in I.A.(1), and (f) record the actual emission rate for each stack and verify that it does not exceed the allowable rate from the matrix [3] [s. NR 439.04(1), Wis. Adm. Code] (5) Madison Kipp Corp. shall keep records of diecaster and foundry employee training records defining (a) what is appropriate material to be charged to the furnace, and (b) how it is to be segregated and labeled. [sec. NR 415.05(1)(g) and 415.05(2)(a)1., Wis. Adm. Code and s. 285.65(3), Wis. Stats.] (6) Madison-Kipp Corp. shall keep the necessary records to verify compliance with the condition which requires that purchased scrap not be melted at this facility. [s. 285.65(4), Wis. Stats.]

[1] "E" is the allowable emission rate in units of lbs/hr, and "P" is the process weight rate in units of tons per hour.

[2] These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed.

A. S17, P35- RCI 1 aluminum melting furnace with chlorine demagging S16, P36 - RCI 2 aluminum melting furnace with chlorine demagging Limitations are for each furnace (unless noted otherwise)			
POLLUTANT	a. LIMITATIONS	b. COMPLIANCE DEMONSTRATION	c. REFERENCE TEST METHODS, RECORDKEEPING AND MONITORING REQUIREMENTS
2. Visible Emissions	(1) 20 percent opacity from each stack [s. NR 431.05, Wis. Adm. Code]	(1) The permittee shall only fire natural gas and propane as fuels in each furnace.[4] [ss. 285.65(3) and 285.63(1)(a), Wis. Stats.] (2) The compliance demonstration methods in I.A.1.b.(1) and (2) for particulate matter shall also be used to demonstrate compliance with the opacity limitation in I.A.2.a.(1). [sec. NR 439.06, Wis. Adm. Code]	(1) Whenever emission testing is required by the Department, compliance with visible emission limits shall be determined by U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code] (2) The permittee shall retain on site, plans and specifications that indicate the furnace fuel usage design capabilities.[5] [s. NR 439.04(1)(d), Wis. Adm. Code] (3) The monitoring requirements of A.1.c.(5) and A.3.c. shall be used to monitor compliance with the visble emission limitation. [s. 285.65(4), Wis. Stats.]

[3] PM has a 24 hour standard so daily records are acceptable. Madison-Kipp has proposed a matrix containing nine operating scenarios. Madison-Kipp proposed the matrix to demonstrate compliance with the ambient air quality standard on a facility wide basis. The matrix contains throughput information and emission rates for each significant process at the Atwood and Fair Oaks facilities. Some scenarios list stack parameters and process operation at capacity, others list stack parameters and process restrictions.

[4] Natural gas and propane are clean burning fuels. It is not expected that the visible emission limitation of 20% opacity would be exceeded while firing these fuels, and melting clean metal

[5] These plans and specifications are sufficient because the furnace is designed to only burn natural gas and propane.

3. Chlorine	(1) The usage rate of chlorine for a given magnesium content and furnace temperature may not exceed the maximum rate as follows (a) maximum of 63 pounds per hour chlorine usage for a magnesium content of equal to or greater than 0.18% by weight; (b) maximum of 35 pounds per hour chlorine usage for a magnesium content of less than 0.18% but greater than or equal to 0.1% by weight; (c) 0 pound per hour for a magnesium content of less than 0.10% by weight, (d) At chlorine usage rates above 35 pounds per hour, the furnace temperature shall be at or above 1340° F; (e) Chlorine may not be used at furnace temperatures below 1335° F. [s. 285.65(7), Wis. Stats.]	(1) The monitoring equipment required in this permit shall measure the operational variables with the following accuracy: (a) The temperature monitoring device shall be accurate to within 0.5% of the temperature being measured in degrees Fahrenheit or 5°F of the temperature being measured, or the equivalent in degrees Centigrade, whichever is greater. (b) The flow monitoring devices shall be accurate to within 5% of the current being measured. (c) The current (amperage) monitoring device shall be accurate to within 5% of the current being measured. [s. NR 439.055(3)(c), Wis. Adm. Code] (2) To comply with I.A.3 a.(2), the permittee shall determine the monthly chlorine emissions as follows $E_{Cl2} = 0.034$ * [Pounds of chlorine used] Where E_{Cl2} is the chlorine emissions in pounds and 0.034 is the emission factor obtained in the stack emission test in October 2003. If a future stack test results in a higher emission factor, this higher emission factor shall be used in place of 0.034. [sec. NR 445.04(1), Wis. Adm. Code and s. 285.65(3), Wis. Stats.] (3) At the end of each month, up through the 12th month following permit issuance, the average actual emissions shall be determined to be the total emissions since permit issuance, divided by the number of months since permit issuance. From the 13th month and beyond, the average monthly emissions shall be determined by adding the emissions for the previous 12 consecutive months and dividing the total by 12. The average may not exceed 0.83 tons of emissions. These calculations shall be performed for each calendar month within 5 working days of the end of that month. [s. NR 407.09(1)(c)1.b., Wis. Adm. Code]	(1) (a) The permittee shall continuously monitor and record the chlorine feed rate in units of pounds per hour when the furnace is in operation, and (b) The permittee shall determine through analytical tests and record the magnesium content of the melted aluminum, in units of percent by weight, at least once every four hours when the furnace is in operation and chlorine is added to the process. [s. NR 439.04(1)(d), Wis. Adm. Code] (2) The permittee shall continuously monitor and record the metal temperature in each furnace when the unit is in operation. [s. NR 439.04(1)(d), Wis. Adm. Code] (3) The permittee shall continuously monitor the recirculation injection pump motor amperage. The pump amperage shall be recorded at least once during each eight hours that chlorine is added to each furnace. [s. NR 439.04(1)(d), Wis. Adm. Code] (4) The permittee shall monitor the metal level in each furnace. The furnace metal level (in units of inches down from full) shall be recorded at least once during each two hour period that chlorine is added to each furnace. [s. NR 439.04(1)(d), Wis. Adm. Code] (5) The following records shall be maintained. (a) The actual amount of chlorine used each month (tons per month); (b) the actual amount of chlorine emissions each month, in tons, calculated using an emission factor obtained from testing required by this permit and multiplied by the actual usage of chlorine ; and (c) the monthly average chlorine emissions, calculated according to b.(2), to show compliance with the limitation of an average of 0.83 tons per month. [s. NR 439.04(1)(d), Wis. Adm. Code]

3. Chlorine *continued*	(2) Emissions of chlorine may not exceed 0.83 tons per month (10.0 TPY), determined as an average over each 12 consecutive month period.[6] [s. 285.65 (7), Wis. Stats.] (3) Chlorine may not be added when the recirculation injection pump motor amperage is less than 9 amps[7] [s. 285.65(3), Stats.] (4) Chlorine may not be added when the metal level in the furnace is more than 7 inches down from full [s. 285.65(3), Stats.] (5) Nitrogen shall not be added when chlorine is being added to the furnace. [s. 285.65(3), Stats.] (6) Stack Parameters for each of S16 and S17 (a) The height of the stack serving each furnace shall be at least 100.0 feet above ground level (b) The inside diameter at the outlet of the stack may not exceed 2.6 feet. (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Stats.] (7) Total facility chlorine usage for the RCI 1 and RCI 2 combined may not exceed 63 pounds per hour. [s. 285.65(4), Wis. Stats.]	(3) (a) All instruments used to monitor operational variables shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. [s. NR 439.055(4), Wis. Adm. Code] (b) Calibration logs shall be kept and maintained by the permittee for each monitoring device required by this permit. [s. NR 439.04 (1)(d), Wis. Adm. Code] (4) The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters for each of the stacks [s. NR 439.04(1)(d), Wis. Adm. Code][8] (5) Compliance with chlorine emission limits shall be determined by methods described in sec. NR 439.06(8), Wis. Adm. Code. [sec. NR 439.06, Wis. Adm. Code]	(6) (a) All instruments used to monitor operational variables shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. [s. NR 439.055(4), Wis. Adm. Code] (b) Calibration logs shall be kept and maintained by the permittee for each monitoring device required by this permit. [s. NR 439.04 (1)(d), Wis. Adm. Code] (7) Whenever emission testing is required by the Department, compliance with the chlorine emission limits shall be determined by U.S. EPA Method 26A. [sec. NR 439.06(8), Wis. Adm. Code] (8) Madison-Kipp Corporation shall keep the following records: (a) the pounds of chlorine used in each furnace for each hour of operation, and (b) the total pounds of chlorine used in all furnaces for each hour of operation. [s. 285.65(4), Wis. Stats.] (9) (a) The permittee shall continuously monitor the nitrogen addition to the furnace. (b) When the nitrogen system is in use, the nitrogen addition shall be recorded at the start up of the chlorine addition and prior to the shut down of the chlorine addition to the furnace. [s. NR 439.04(1)(d), Wis. Adm. Code] (10) The permittee shall keep and maintain onsite, technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1), Wis. Adm. Code]

[6]Madison-Kipp requested this more restrictive limit. MACT review is required for new sources of federal hazardous air pollutants (HAPS) that exceed 10.0 tons per year per pollutant and 25.0 tons per year for any combination of federal HAPS. 40 CFR Part 63, National Emission Standards for Hazardous Pollutants for Secondary Aluminum Productions; Final Rule - Regulated Entities - The final rule does not apply to manufacturers of aluminum diecastings that melt no material other than clean charge and materials generated within the facility and that do not operate a thermal chip dryer, sweat furnace, or scrap dryer/delaquering kiln/decoating kiln.

[7]Note: When the pump shaft breaks, the system draws less power and less amperage. The pump shuts down if the amperage is less than 9 amps.

[8]These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments, acceptable ambient concentrations or ambient air quality standards will be violated when constructed as proposed.

4. Hydrogen Chloride	(1) The emission rate of hydrogen chloride may not exceed the maximum rate [9] as determined by the most recent Department approved stack test which demonstrates compliance with the aluminum soluble salt limit in I.A.5., not to exceed 64.9 pounds per hour[10] for the stack parameters listed in I.A.1.a.(2). [s. 285.65(3), Wis. Stats. and s NR 445.04(1), Wis. Adm Code] (2) Emissions of hydrogen chloride may not exceed 0.83 tons per month (10.0 TPY), determined as an average over each 12 consecutive month period.[11] [s. 285.65 (7), Wis. Stats.] (3) Total facility chlorine usage for the RCI1 and RCI 2 combined may not exceed 63 pounds per hour. [s 285.65(4), Wis. Stats.]	(1) The compliance demonstration methods for chlorine in I.A.3.b. shall also be used to demonstrate compliance with the limitation in I.A.4 a.(1). [sec. NR 445.04(1), Wis. Adm. Code and s. 285 65(3), Wis. Stats.] (2) To comply with I.A.4.a.(2), the permittee shall determine the monthly hydrogen chloride emissions as follows $E_{HCl} = 0.205 *$ [Pounds of chlorine used] Where E_{HCl} is the hydrogen chloride emissions in pounds and 0 205 is the emission factor obtained in the stack emission test in October 2003. If a future stack test results in a higher emission factor, this higher emission factor shall be used in place of 0.205. [sec. NR 445.05(1), Wis Adm. Code and s. 285.65(3), Wis. Stats.] (3) At the end of each month, up through the 12th month following permit issuance, the average usage shall be determined to be the total emissions since permit issuance, divided by the number of months since permit issuance. From the 13th month and beyond, the average monthly emissions shall be determined by adding the emissions for the previous 12 consecutive months and dividing the total by 12. The average may not exceed 0.83 tons of emissions. These calculations shall be performed for each calendar month within 5 working days of the end of that month. [s. NR 407.09(1)(c)1.b., Wis. Adm. Code]	(1) The recordkeeping methods in I.A.3.c. for chlorine shall be required to show compliance with the HCl limit in I.A.4.a.(1). [sec. NR 445.05(1), Wis. Adm. Code and s. 285.65(3), Wis. Stats.] (2) Compliance with the hydrogen chloride emission limits shall be determined by U.S EPA Method 26A. [sec NR 439.06(8), Wis Adm. Code] (3) Madison-Kipp Corporation shall keep the following records: (a) the pounds of chlorine used in each furnace for each hour of operation, and (b) the total pounds of chlorine used in all furnaces for each hour of operation. [s. 285.65(4), Wis Stats.] (4) Whenever stack testing is required: (a) The Department shall be informed at least 20 working days prior to any stack testing so a Department representative can witness the testing. At the time of notification a compliance emission test plan shall also be submitted to the Department for approval When approved in writing, an equivalent test method may be substituted for the reference test method. (b) All tests shall be conducted while operating at 100% capacity (chlorine usage). If operation at 100% capacity (chlorine usage) is not feasible, the source shall operate at a level which is approved by the Department in writing. [s. NR 439.07(2), Wis. Adm. Code] (5) The following records shall be maintained (a) the actual amount of hydrogen chloride emissions each month, in tons, calculated using an emission factor obtained from testing required by this permit and multiplied by the actual usage of chlorine ; and (b) the monthly average hydrogen chloride emissions, calculated according to b.(2), to show compliance with the limitation of an average of 0.83 tons per month [s. NR 439.04(1)(d), Wis. Adm. Code]

[9] If all chlorine were converted to HCl, theoretically 64.9 pounds of HCl could be formed from 63 pounds of chlorine. Madison-Kipp has proposed to show compliance with the 10 TPY limit through the use of stack testing results.

[10] Madison Kipp requested this more restrictive limit. This requirement is included because the source was reviewed with these stack parameters and it was determined that no increments, acceptable ambient concentrations or ambient air quality standards will be violated when constructed as proposed.

[11] Madison-Kipp requested this more restrictive limit. MACT review is required for new sources of federal hazardous air pollutants (HAPS) that exceed 10.0 tons per year per pollutant and 25.0 tons per year for any combination of federal HAPS 40 CFR Part 63, National Emission Standards for Hazardous Pollutants for Secondary Aluminum Productions; Final Rule - Regulated Entities - The final rule does not apply to manufacturers of aluminum diecastings that melt no material other than clean charge and materials generated within the facility and that do not operate a thermal chip dryer, sweat furnace, or scrap dryer/delaquering kiln/decoating kiln.

5. Aluminum Soluble Salts	**(1)** 2.0 pounds per hour [s. 285.65(7), Wis. Stats. and s. NR 445.04(4), Wis. Adm. Code] **(2)** Total facility chlorine usage for the RC11 and RC12 combined may not exceed 63 pounds per hour . [s 285.65(4), Wis. Stats.]	**(1)** The compliance demonstration methods for chlorine in I.A.3.b. shall also be used to demonstrate compliance with the limitation in I.A.5.a.(1). [sec. NR 445.04(1), Wis. Adm. Code and s. 285.65(3), Wis. Stats.] **(2)** The permittee shall monitor **(a)** chlorine usage in pounds per hour, **(b)** the aluminum melt rate in tons per day, **(c)** the percentage of magnesium present in the aluminum, and **(d)** the type of fuel burned. [s. NR 439.07(1), Wis. Adm. Code]	**(1)** Compliance with the aluminum soluble salt emission limits shall be determined by U.S. EPA Method 29 for metals. [sec. NR 439.06(8), Wis Adm. Code] **(2)** Madison-Kipp Corporation shall keep the following records: **(a)** the pounds of chlorine used in each furnace for each hour of operation, and **(b)** the total pounds of chlorine used in all furnaces for each hour of operation. [s. 285.65(4), Wis. Stats.]
6. 2,3,7,8-Tetrachlorodibenzo-p-dioxin[12]	**(1)** 0.0001 pounds per year If facility emissions of this Table 3 Group B hazardous air contaminant exceed the table value of 0.0001 pounds per year, Madison-Kipp Corp. shall control emissions of this contaminant to a level which is the best available control technology [s NR 445.04(3)(b), Wis. Adm. Code]	**(1)**To comply with I.A.6.a.(1), the permittee shall determine the monthly total dioxin and furan emissions[13] as follows $E = 7.85 * 10^{-11}$ [Pounds of chlorine used] Where E is the total dioxin and furan emissions in pounds and $7.85*10^{-11}$ is the emission factor obtain in stack emission test at the facility. [sec. NR 445.04(3), Wis Adm. Code and s. 285.65(3), Wis. Stats.] **(2)** At the end of each month the permittee shall add up the total dioxin and furan emissions from the previous 12 consecutive months. These calculations shall be performed for each calendar month within 5 working days of the end of that month [s. NR 407.09(1)(c)1.b., Wis. Adm. Code]	**(1)** Compliance with the emission limit for 2,3,7,8-Tetrachlorodibenzo-p-dioxin shall be determined using USEPA Method 23 or a method approved in writing by the Department. [sec. NR 439.06(8), Wis. Adm Code]

[12] 40 CFR Part 63, National Emission Standards for Hazardous Pollutants for Secondary Aluminum Productions, Final Rule - Regulated Entities - The final rule does not apply to manufacturers of aluminum diecastings that melt no material other than clean charge and materials generated within the facility and that do not operate a thermal chip dryer, sweat furnace, or scrap dryer/delaquering kiln/decoating kiln.

[13] 2,3,7,8-tetrachlorodibenzo-para-dioxin is a small portion of total dioxin and furan.

B. OTHER CONDITIONS APPLICABLE TO THE ENTIRE FACILITY

CONDITION TYPE	a. CONDITIONS	b. COMPLIANCE DEMONSTRATION
1. Reporting	(1) The permittee shall periodically submit monitoring and compliance reports. [s. NR 407.09(1)(c)3., Wis. Adm. Code]	(1) Submit the results of monitoring or a summary of monitoring results required by this permit to the Department every 6 months. (a) The time periods to be addressed by the submittal are January 1 to June 30 and July 1 to December 31. (b) The report shall be submitted to the South Central Region Air Management Program within 30 days after the end of each reporting period. (c) All deviations from and violations of applicable requirements shall be clearly identified in the submittal. (d) Each submittal shall be certified by a responsible official as to the truth, accuracy and completeness of the report. [s. NR 439.03(1)(b), Wis. Adm. Code] (2) Submit an annual certification of compliance with the requirements of this permit to the Wisconsin Department of Natural Resources, South Central Region Air Management Program, address, phone (608) 275-3266 (a) The time period to be addressed by the report is the January 1 to December 31 period which precedes the report. (b) The report shall be submitted to the South Central Region Air Management Program within 30 days after the end of each reporting period. (c) The information included in the report shall comply with the requirements of Part II Section N of this permit. (d) Each report shall be certified by a responsible official as to the truth, accuracy and completeness of the report. [s. NR 439.03(1)(c), Wis. Adm. Code]

C. OTHER CONDITIONS APPLICABLE TO THE ENTIRE FACILITY

Condition Type: I. Construction Permit Requirements

a. Conditions:

(1) Construction Notification: The permittee shall inform the Wisconsin Department of Natural Resources, South Central Region Air Management Program, 3911 Fish Hatchery Road, Fitchburg, WI 53711, phone (608) 275-3266, in writing of the following for the emissions unit covered in this permit:

Notice of commencing construction shall be submitted within 15 days of the start of construction.

Notice of intent to initially operate the source(s) covered by this permit, 30 days prior to the anticipated date of initial operation.

Notice of the actual date of initial startup shall be submitted within 15 days of the initial startup.

[s. NR 439.03(1), Wis. Adm. Code]

(2) Construction Permit Expiration: This construction permit expires 18 months after the date of issuance. Construction or modification and an initial operation period for equipment shakedown, testing and Department evaluation of operation to assure conformity with the permit conditions is authorized for each emissions unit covered in this permit. Please note that the sources covered by this permit are required to meet all emission limits and conditions contained in the permit at all times, including during the initial operation period. If 18 months is an insufficient time period for construction or modification, equipment shakedown, testing and Department evaluation of operation, the permit holder may request and the Department may approve in writing an extension of this permit.

[ss. 285.60(1)(a)2 and 285.66(1), Wis. Stats.; s. NR 406.12, Wis. Adm. Code]

(3) Completion of Operation Permit Application :

Compliance information required to complete the operation permit application for the emission units included in this permit should be submitted to th at least 4 months prior to the expiration of the Construction Permit.

Operation of the source(s) covered by this permit after this permit expires is prohibited unless a complete operating permit application for the source(been submitted to the Department.

[s. 285.60(1)(b)1., Wis. Stats.; s. NR 407.04(1)(b), Wis. Adm. Code]

C. OTHER CONDITIONS APPLICABLE TO THE ENTIRE FACILITY

Condition Type: 2. Stack Testing Requirements

a. Conditions:

(1) All testing shall be performed while the emissions unit is operating at 100% capacity. If operation at 100% capacity is not feasible, the source shall operate at a capacity level which is approved by the Department in writing. [s. NR 439.07(1), Wis. Adm. Code]

(2) The Department shall be informed at least 20 working days prior to any stack testing so a Department representative can witness the testing. At the time of notification a compliance emission test plan shall also be submitted to the Department for approval. When approved in writing, an equivalent test method may be substituted for the reference test method. [s. NR 439.07(2), Wis. Adm. Code]

(3) Two copies of the report on the tests shall be submitted to the Department for evaluation within 60 days following the tests. [s. NR 439.07(9), Wis. Adm. Code]

C. OTHER CONDITIONS APPLICABLE TO THE ENTIRE FACILITY	
Condition Type: 3. Malfunction Prevention and Abatement Plans	
a. Conditions:	**b. Compliance Demonstration:**
(1) A malfunction prevention and abatement plan shall be prepared and followed for the plant. [s. NR 439.11, Wis. Adm. Code] (2) A written copy of the plan shall be kept at the plant and shall be updated once every five years. [s. NR 439.11(1), Wis. Adm. Code] (3) All air pollution control equipment shall be operated and maintained in conformance with good engineering practices (i.e. operated and maintained according to manufacturer's specifications and directions) to minimize the possibility for the exceedance of any emission limitations [s NR 439.11(4), Wis. Adm. Code] (4) The facility shall submit the plan to the South Central Region Air Management Program, for review and approval. The department may amend the plan if deemed necessary for malfunction prevention or for the reduction of excess emissions during malfunctions. [s. NR 439.11(2), Wis. Adm. Code]	(1) The plan shall be developed to prevent, detect and correct malfunctions or equipment failures which may cause any applicable emissions limitation to be violated or which may cause air pollution. [s. NR 439.11(1), Wis. Adm. Code] (2) This plan shall include installation, maintenance and routine calibration procedures for the control equipment instrumentation. This plan shall require an instrumentation calibration at the frequency specified by the manufacturer but not less than once per year plus an inspection and/or calibration whenever instrumentation anomalies are noted. [ss NR 407.09(1)(c)1.c., NR 439.055(4) and s. NR 439.11, Wis. Adm Code] (3) The plan shall require a copy of the operation and maintenance manual for the control equipment be maintained on site. The plan shall contain all of the elements in s. NR 439.11(1)(a) - (h), Wis. Adm. Code. [s. NR 439.11, Wis. Adm. Code] (4) The facility shall maintain an inventory of normal consumable items necessary to ensure operation of the control device(s) in conformance with the manufacturer's specifications and recommendations. [s. NR 439.11, Wis Adm Code]

C. OTHER CONDITIONS APPLICABLE TO THE ENTIRE FACILITY

Condition Type: 4. Compliance Reports / Records

a. Conditions:	b. Compliance Demonstration:
(1) Upon issuance of the operation permit, the permittee shall submit periodic monitoring reports. [s. NR 407.09(1)(c)3., Wis. Adm. Code] (2) Upon issuance of the operation permit, the permittee shall submit periodic compliance certification. [s. NR 407.09(4)(a)3., Wis. Adm. Code] (3) The records required under this permit shall be retained for at least five(5) years and shall be made available to department personnel upon request during normal business hours. [s. NR 422.127(4)(d), s. NR 439.04, s NR 439.05, Wis. Adm Code]	(1) Submit the results of monitoring or a summary of monitoring results required by this permit to the Department every 6 months. (a) The time periods to be addressed by the submittal are : January 1 to June 30 and July 1 to December 31. (b) The report shall be submitted to the South Central Region Air Management Program, 3911 Fish Hatchery Road, Fitchburg, WI 53711, phone (608) 275-3266 within 30 days after the end of each reporting period. (c) All deviations from and violations of applicable requirements shall be clearly identified in the submittal. (d) Each submittal shall be certified by a responsible official as to the truth, accuracy and completeness of the report. (e) The content of the submittal is described in item D. of Part II of the operation permit. [s. NR 439.03(1)(b), Wis. Adm. Code] [s. NR 439.03(1)(b), Wis. Adm. Code] (2) Submit an annual certification of compliance with the requirements of this permit to the Wisconsin Department of Natural Resources, South Central Region Air Management Program, 3911 Fish Hatchery Road, Fitchburg, WI 53711, phone (608) 275-3266 where source should submit, address, phone (a) The time period to be addressed by the report is the January 1 to December 31 period which precedes the report. (b) The report shall be submitted to the South Central Region Air Management Program, 3911 Fish Hatchery Road, Fitchburg, WI 53711, phone (608) 275-3266 within 30 days after the end of each reporting period. (c) The information included in the report shall comply with the requirements of Part II Section N of this permit. (d) Each report shall be certified by a responsible official as to the truth, accuracy and completeness of the report. [s. NR 439.03(1)(c), Wis. Adm Code]

Attachment C
CAM Comments #1

Clean Air Madison
cleanairmadison@sbcglobal.net

February 6, 2004

Mr. Paul Yeung, Review Engineer
Bureau of Air Management
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707

Subject: Comments on Draft Permit #03-POY-328
Madison-Kipp Corporation
Madison, Wisconsin

Dear Mr. Yeung:

The Wisconsin Department of Natural Resources is proposing to issue Permit #03-POY-328 to the Madison-Kipp Corporation (MKC) which operates an aluminum foundry and die casting operations in our densely populated neighborhood. Clean Air Madison, which has represented the interests of residents concerned about the discharges from this foundry, are submitting the enclosed comments on the draft permit.

If approved, this permit will allow an additional particulate matter (PM), aluminum salts and dioxin/furan emissions from the two aluminum furnaces. Though the permit will reduce the amount chlorine which can be used by the furnaces, recent tests show an increase in hydrogen chloride emissions.

Despite the availability of readily available control methods, the DNR is requiring MKC to comply with PM emission limitations which are over 30 years old. Instead of controlling these emissions, MKC will use tall stacks to disperse them throughput our neighborhood. The only limit on the amount of emissions allowed from MKC is compliance with the particulate matter air quality standards. The TSP air quality standards enforced by the DNR are over 30 years old. Compliance with air quality standards is based on a simplistic modeling analysis which assumes MKC is located in a flat, rural area. No attention is given to the dense population, rolling, urban terrain, or homes, businesses and schools immediately adjacent to the foundry.

We are disappointed that the DNR is once again approving additional uncontrolled discharges into our neighborhood with little regard for the health and welfare of the residents surrounding the foundry. When responding the enclosed comments and those of surrounding residents, we encourage will DNR to use its resources and discretion to reduce the air pollution emissions and exposure caused by MKC, rather than seek ways to allow more discharges into our neighborhood, and recognize that the unique location of this foundry demands the greatest level of control.

Thank you for the opportunity to comment on the pending construction permit. Please contact us if you have any questions during your review of these comments.

Sincerely,

Enclosure

cc: Lloyd Eagan, Director WDNR Bureau of Air Management
Bharat Mathur, Director EPA-Region 5, Air & Radiation Division
Mayor Dave Cieslewicz
Representative Mark Miller

1. NEED FOR A MORE ACCESSIBLE PUBLIC HEARING

Any DNR approvals for new discharges from MKC are a concern to surrounding residents. It is imperative that the DNR provide ample opportunity for us to review background documents and submit comments. The public hearing for Permit #03-POY-328 is being held on February 6th at 11:00 am at the DNR office in downtown Madison. The two prior hearings held on MKC air quality permits in 1999 and 2000 were held in the evening at a location in the neighborhood. These hearings were well attended by concerned residents.

It is not clear why the DNR chose to change the time and location of the hearing for Permit #03-POY-328 so that it was less accessible, especially to residents who must work during the day. We request that the DNR not conclude its review of Permit #03-POY-328 until another public hearing can be held which is more accessible to neighborhood residents. This second public hearing should be held in the evening at a location which is more accessible. The DNR should continue accepting public comments on this project until the new hearing is held.

2. PROJECT DOES NOT COMPLY WITH THE PSD REGULATIONS.

The DNR will relax the PM limitations on the furnaces up to the maximum allowed under s.NR 415.05, Wis. Adm. Code. These regulations are over 30 years old and require no use of air pollution control equipment. Recent aluminum foundry projects as well as the recent federal air toxics regulations for secondary aluminum processing plants demonstrate that emission control methods for PM as well as hydrogen chloride emissions are readily available.

In the Facility and Project Classification section of the DNR preliminary determination, it is concluded that the existing MKC facility has emissions greater than 100 tons per year, but is a minor source under the Prevention of Significant Deterioration regulations of Chapter NR 405, Wis. Adm. Code. Apparently, the DNR has concluded that MKC is not a **secondary metal production plant** under the PSD regulations. If MKC were considered a secondary metal production plant, the facility would be classified as a major source and this project and future projects would be subject to the PSD requirements including the requirement to use of state-of-art emission control methods.

There is sufficient background on the secondary metal production plants for the DNR to conclude that MKC should be included in this category. USEPA guidance on this PSD category clearly separates die casters which use high quality metal at ready-to-cast quality, versus secondary aluminum processing plants which flux molten aluminum with chlorine gas to separate undesirable metals. This issue is clarified in the December 4, 1998 memorandum from the Information Transfer and Program Integration Division entitled, "Treatment of Aluminum Die Casting Operations for the Purposes of New Source". Based on this clarification, ever since MKC began using chlorine gas in the mid-1990's to purify its aluminum scrap, MKC became a secondary metal production plant and major source under the PSD regulations.

This conclusion was verified with Juan Santiago of the USEPA Integrated Implementation Group. This office manages the development and implementation of requirements under the new source review and PSD provisions of the Clean Air Act, and manages the national implementation of air toxics program requirements under Section 112 of the Clean Air Act. Mr. Juan Santiago verified that

a die casting which uses chlorine to demag its aluminum, would be considered in the secondary metal production plant category of the PSD regulations. Mr. Santiago's telephone number is (919) 541-1084 and email address is santiago.juan@epa.gov.

With the issuance of Operation Permit #113014220-P01 in 2001, potential emissions from MKC were 108 tons per year of PM and 127 tons per year of VOC. Both of these pollutants are over the 100 ton per year threshold for a major source under the PSD regulations. The proposed potential emissions from the modified aluminum furnaces under Permit #03-POY-328 are 74 tons per year, which exceed the 15 ton per year PSD threshold at which the PSD requirements would apply.

If subject to the PSD regulations, MKC would be required to use emission control equipment to control its PM and hydrogen chloride emissions. In a recent PSD approval for the Honda Manufacturing of Alabama, LLC, furnace emissions of these two pollutants were limited to 0.4 lbs/ton and 0.4 lbs/ton, respectively. If MKC were required to control its emissions to this level, it would need to reduce PM emissions by 70% and HCl emissions by 95%.

Further, BACT for melting furnaces would likely require the use of a fabric filter baghouse system. Assuming a flow rate of 25,810 acfm for one furnace at a baghouse outlet concentration of 0.004 gr/acf, controlled emissions would be 0.22 lbs/ton, resulting in a 90% reduction in the PM emissions currently allowed under draft Permit #03-POY-328.

If MKC were considered a major source under the PSD regulations, then numerous permits approved throughput the 1990's should have been subject to the PSD requirements. These include the following construction permits:

- #99-BSP-912 allowed an increase in the chlorine, hydrogen chloride, aluminum salts, and particulate matter emissions from the RCI aluminum furnace and an increase in the particulate matter limitation for the MPH furnace. A draft permit was issued November 18, 1999. A final construction permit was issued December 8, 2000.

- Draft construction permit #99-BSP-925 was issued to allow the construction of a new aluminum furnace (RC2) limiting air toxics emissions to less than 10 TPY for one pollutant and 25 TPY for combined pollutants. A draft permit was issued January 25, 2000. In a February 16, 2000 letter, USEPA Region V informed the DNR that the emissions increase from this project should be combined with that from a pending earlier permit, 99-BSP-912, or else this project would be circumventing the new source MACT requirements of 112(g). As a result, MKC withdrew this permit application on February 11, 2000.

- #00-BSP-944 allowed the modification of the P36 -RCI aluminum melting furnace to allow the injection of chlorine to remove excess magnesium from melted aluminum. The draft permit was issued in October 5, 2000. A final construction permit was issued December 8, 2000.

- #00-BSP-929 allowed the construction of a new 2000 kw diesel generator. Allowable NO_x emissions were 51 TPY. In and of themselves, these emissions are above the PSD significant

emissions increase threshold. The draft permit was issued October 5, 2000. A final construction permit was issued December 20, 2000.

Considering the significant reductions in emissions that would be achieved, Permit #03-POY-328 should not be issued until the DNR designates MKC operations as within the secondary metal production plant category and the proposed furnace project complies with the PSD requirements.

3. MODELING ANALYSIS IS NOT ADEQUATE.

MKC is not controlling its discharges but relying on dispersion to comply with air quality standards. The DNR modeling analysis for Permit #03-POY-328 is contained in the DNR preliminary determination. This analysis is inaccurate. It assumes that the foundry is located in flat, rural terrain, rather than surrounded by rolling, urban terrain with nearby homes, schools and businesses. If an accurate analysis were conducted taking into consideration local conditions, this project would not comply with air quality standards and the proposed permit could not be issued.

The modeling procedures used by the DNR sets a double standard. People that live and work on ground level are protected, while those that live and work on upper stories are not protected. Under the DNR modeling procedures, MKC could build a stack with its exit directly outside a neighbor's windows, porch or balcony, since above ground concentrations are not currently considered by the DNR. This is a unique concern to the MKC foundry since it is located in a populated urban area. Surrounding homes have backyards which begin at the foundry buildings. Foundry roof vents exhausting the die lubricant emissions are level with surrounding windows, porches and balconies and level with windows at nearby Lowell School.

Recent and proposed residential construction in the neighborhood reinforces the need for a more thorough evaluation of air quality impacts of MKC emissions. Since issuance of the Title V operation permit to MKC in 2001, new condominiums have been constructed at the corner of Maple and Fair Oaks, only one block from MKC. The proposed Iron Works development of the Duraline Scales property immediately north of MKC will include multi-story residential housing.

DNR staff have discretion to determine the modeling procedures for this project. We encourage DNR staff to develop modeling procedures appropriate for this project and its location, and which protects all nearby residents.

The inaccuracy of the modeling analysis is demonstrated by actual air pollutant measurements in the vicinity of MKC and health effects reported by nearby residents.

For example:

The DNR operates an ambient monitor for total suspended particulates (TSP) near MKC. This monitor has measured 24-hour average TSP concentrations above 150 ug/m^3 state air quality standard for TSP in 1999 and 2000. While the DNR air quality modeling analysis predicts compliance with the air quality standard using maximum approved emission rates, violations of the air standard have been measured under actual and lower emission rates.

In a July 13, 1994 WDNR Entity Contact Report Form, Linda Cutts with the WDNR states that: "Within a few minutes of leavingthe plant(less than 5 min.), I experienced a dizzy, 'woozy' feeling. My face and fingers felt numb and tingly, my heart was 'pounding, and I found my breathing rapid and shallow. My proprioception was disrupted, and I did not believe I could safety drive."

In 1999, the WDNR conducted an odor survey of neighborhood residents. Citizens attributed the following health effects to exposure to odors from MKC:

- Nausea
- Headaches
- Irritability
- Loss of Appetite
- Difficulty Sleeping
- Nose Irritations
- Throat Irritations
- Eye Irritations

In the odor survey, residents reported the need to stay indoors, to close windows, or to limit outdoor activities due to exposure to MKC odors.

MKC files at DNR offices contain hundreds of complaints from nearby residents. Many of these complaints are directly linked to odors from the MKC foundry.

If air quality standards are being attained as predicted by the DNR dispersion modeling analysis, why are reported health effects so noticeable and widespread?

If the modeling analysis were repeated taking into account the following changes, it would likely show that the existing foundry design would result in a violation of the air quality standards. Permit #03-POY-328 could not be issued until appropriate action were taken to protect air quality in our neighborhood.

The modeling procedures used by the DNR focus solely on ground level concentrations. Despite the obviously unsafe conditions, these procedures would allow the exit of an industrial stack to be located just outside a residential window or balcony. This is the situation at MKC where foundry roof vents are immediately adjacent to adjacent homes and level with windows at nearby Lowell School.

One method to address the inaccuracy of the DNR modeling analysis would be to use flagpole receptors, which estimate concentrations at windows and balconies above ground level. The use of flagpole receptors is a common modeling procedure in other states, and is a readily available feature of the DNR modeling programs. The DNR has the regulatory authority to determine the most appropriate modeling procedures for the issuance of air pollution permits in Wisconsin and can choose to improve its modeling analysis of MKC operations through the use of flagpole receptors.

As an example, the DNR modeling analysis presented in the preliminary determination shows that MKC operations will barely comply with the air quality standards. When this analysis is repeated

using flagpole receptors, predicted concentrations are several times higher and well above the air quality standards.

Another method is to subtract the height of surrounding homes and buildings from the height of the MKC stacks. Whatever modeling approach is used, it should account for the complex urban environmental surrounding the foundry rather than assuming flat, rural, unpopulated terrain.

Other factors unique to the MKC location which the DNR did not consider in its modeling analysis include the following:

- Downwash Effect of Nearby Homes and Buildings - Any stack located within 5L of a structure will be influenced by that structure. This is the situation for MKC where homes adjacent to the MKC buildings will influence the dispersion of pollutants from the roof vents.

- Elevated Terrain in the Surround Neighborhood - Throughout the neighborhood there are significant changes in elevations which should be incorporated into the analysis. The DNR has incorporated elevations into other permit modeling. Changes in elevations are apparent when the odors from MKC can be smelled on the Lowell Elementary playground or elevated areas several blocks from MKC.

- Urban Dispersion Coefficients - The neighborhood surrounding MKC is an urban area consisting of homes, businesses and schools. It is not the rural area assumed by the DNR.

- Downwash Cavity Concentrations - Discharges from the MKC roof vents are influenced by downwash leading to elevated concentrations in the downwash cavity which would be located in the backyards of adjacent homes. It is common procedure in other states to verify compliance with air quality standards in this downwash cavity.

- Correct Inventory of Increment Consuming Sources - This permit includes the first analysis of compliance with the PSD air quality increments for MKC operations so every effort should be made to use an accurate list of increment consuming air pollution sources. The PM_{10} increment is 30 ug/m^3, lower than the 150 ug/m^3 air quality standard. The preliminary determination identifies only increment consuming emission sources at MKC. This list should be expanded to include other sources in the Madison area as these may also impact on the same area. The preliminary determination also identifies those sources which expand the increment by using negative emission rates. Since the a RCI 2 (Furnace #2) was constructed after the PSD baseline was established, it should not be included in the list of increment expanding sources.

The DNR has the regulatory authority to determine the most appropriate modeling procedures for this permit and has many tools to assure the accurate prediction of compliance with air quality standards. DNR should recognize the foundry is not located in a flat, rural area, but is surrounded by rolling, urban terrain with nearby homes, schools and businesses. Permit #03-POY-328 should not be issued until an accurate modeling analysis has been conducted.

4. NEED FOR MORE RIGOROUS TESTING AND MONITORING.

Permit #03-POY-328 is necessary because current furnace limitations have been exceeded. Residents have previously raised the issue of inadequate emission estimates during issuance of prior permits, but DNR staff responded that sufficient testing had been conducted to accurately estimate the MKC emissions. To assure no future violations occur, the new permit should include more testing and monitoring. This could include annual compliance tests for PM and aluminum salts and continuous emissions monitoring for visible and hydrogen chloride emissions.

Furnace emissions will vary depending many operating conditions including the cleanliness of the scrap aluminum and the ability of MKC to add of chlorine in the proper amounts. Occasional opaque, black plumes from the furnace stacks have been seen from the furnace stacks and show that excessive emissions can occur. These short-term excessive emissions will have immediate impacts on the residents surrounding the foundry. This concern would be addressed by a requirement to install continuous emissions monitoring for visible and hydrogen chloride emissions to both verify compliance with the air permit limitations, and assure proper operation of the furnaces.

Permit #03-POY-328 contains conditions to limit hydrogen chloride emissions to 10 tons per year, presumable to avoid MKC designation as a major source of air toxics. Compliance is to be demonstrated using an emission factor developed from stack tests. The formation of hydrogen chloride from the chlorine will very depending on operating conditions such as the chlorine injection rate and the condition of the aluminum. Tests during 1995 showed a hydrogen chloride formation rate of 0.1 lbs HCl per lbs Cl_2, while the 2003 tests showed a formation rate which was double at 0.2 lbs HCl per lbs Cl_2. The permit includes a placeholder suggestion a higher emission factor should be used if determined by future testing. The variability of hydrogen chloride formation suggests that continuous monitoring is needed to verify that chlorine usage is properly regulated and verify that HCl emissions remain below the 10 ton per year threshold. This concern would be addressed by a requirement to install continuous emissions monitoring for hydrogen chloride emissions to verify compliance with the air permit limitations.

Permit #03-POY-328 is necessary because PM emissions are higher than estimates in existing permits. While it is clear that aluminum salts comprise some of the PM emissions, the other constituents are not known. USEPA emission factors for aluminum furnaces and aluminum plants note the presence of other hazardous air pollutants including antimony, arsenic, cadmium, chromium, cobalt, lead, manganese, nickel, and selenium. All of these pollutants are regulated under the NR 445 hazardous air pollutant rules. The permit should include a requirement to test for the remaining constituents of the increased PM emissions.

5. NEED FOR GREATER EVALUTION OF DIOXIN AND FURAN EMISSIONS

During issuance of the Title V operation permit in 2001, it was not yet determined if the aluminum furnaces were sources of dioxin and furan emissions. In Permit #03-POY-328, the DNR has now verified that the furnaces are a source of dioxin and furan emissions. This is most likely due to the MKC decision to use chlorine to remove magnesium from the scrap aluminum. Based on recent stack tests, the DNR has concluded that emissions of the 2378-TCDD dioxin isomer are less than the 0.0001 lbs/yr threshold for regulation under Chapter NR 445, Wis. Adm. Code.

Operation Permit #113014220-P01 had included a specific requirement for MKC to separate the addition of scrap metal and injection of chlorine by five minutes to minimize the conditions favorable to the formation of dioxin and furan emissions. Formation of dioxin and furan emissions is a complex process and the distribution of the isomers will vary from test to test depending on combustion conditions. Additionally, the formation of dioxin and furan emissions depends on MKC ability to properly operate the furnaces to avoid mixing the organic oils on the scrap castings with the chlorine used for demagging.

With Permit #03-POY-328, the requirement to separate the addition of oil coated scrap and the addition of chlorine has been removed from the permits for the furnaces. This change in permit conditions is not supported or discussed in the preliminary determination for the draft permit. This change in permit requirements will allow simultaneous addition of oil coated scrap and chlorine, increasing the potential for formation of dioxin and furan emissions.

The October 2003 stack tests at MKC showed TEF emissions varied by a factor of three between runs, from 2.62×10^{-9} to 8.31×10^{-9} lbs/hr. This demonstrates the potential variation in emissions depending on operating conditions.

The October 2003 stack tests for hydrogen chloride, dioxins and furances were conducted at a melt rate of 2 tons per hour, only half of the approved capacity of 4 tons per hour. The emission of these pollutants will vary depending on the timing of chlorine introduction and adequate mixing with the aluminum. Until compliance tests are conducted at the 4 ton per hour capacity, production should be limited to the 2 tons per hour throughput used to demonstrate compliance.

With a relaxation of the operating restrictions which limited dioxin and furan emissions, the variability in the isomer distribution of these emissions, the apparent variation in emissions during a single test, and the fact that 2003 testing was conducted at 50% of the furnace capacity, additional testing for dioxin and furan emissions should be included in Permit #03-POY-328.

Permit #03-POY-328 contains emission limits for dioxin and furan emissions. This is the first permit issued to MKC that recognizes the presence of dioxin and furan emissions, but the DNR has conducted no analysis of the air quality impacts of these emissions. Prior permits issued by the DNR to sources of dioxin and furans have included an analysis of impacts using the 2378-TCDD Toxic Equivalents, recognizing that every isomer of dioxin and furans poses a risk. Permit #03-POY-328 should not be issued until an risk analysis is conducted.

Permit #03-POY-328 specifies an emission factor for total dioxin and furans based on an emission factor of lbs dioxins and furans per lbs of chlorine used. The form of this emission factor leads one to assume that low chlorine use leads to proportionally low dioxin and furan emissions. There is no support given for this form of the emission factor. Relatively small amounts of chlorine are needed to create dioxin and furan emissions. Permit #03-POY-328 should use an emission factor based on the units of lbs of dioxin and furan emissions per ton of aluminum melted. The accuracy of this emission factor should be verified through annual testing.

6. NEED FOR EVALUATION OF AIR QUALITY STANDARD FOR $PM_{2.5}$

Approval the permit is based on compliance with the 150 ug/m^3 air quality standard for total suspended particulate matter (TSP). This standard was adopted by the USEPA as a national air standard in 1971 and is decades old. In 1997 USEPA a adopted a new 65 ug/m^3 air quality standard for particles less than 2.5 microns in size ($PM_{2.5}$). This new standard addresses the serious health effects of very small particles. The PM emissions from MKC are generated by the aluminum furnaces and condensation of die casting lube oil, so a large percentage of the emissions will particles in this small size range.

To accurately assess the impacts of the foundry emissions, the DNR should compare the foundry impacts with the new, more restrictive $PM_{2.5}$ air quality standard. Based on the modeling results presented in the DNR preliminary determination, the impact of MKC operations alone, not considering background concentrations, would exceed the $PM_{2.5}$ air quality standard. This exceedence of the new standard demonstrates the need for control of the foundry emissions to assure the protection of neighborhood residents.

7. VIOLATION OF PERMIT LIMITATIONS AND AIR QUALITY STANDARDS

MKC has requested an increase in the particulate matter emissions from 3.0 to 17.0 pounds per hour and an increase in the aluminum salts from 1.3 to 4.0 pounds per hour. The preliminary determination for Permit #03-POY-328 is not clear why MKC has requested an increase in emission limitations for the RCI 1 and RCI 2 furnaces. October 2003 test results show that MKC is violating its current emission limitations for particulate matter and aluminum salts suggesting the need for higher emission limitations.

Permit #113014220-P01 for the RCI 1 furnace was issued May 10, 2001 with a TSP emission limitation of 1.51 lbs/hr. If recent stacks tests demonstrate this furnace cannot comply with its current PM emission limitation of 1.51 lbs/hr, does this mean this furnace has violated its permit for nearly 3 years and the DNR should issue a Notice of Violation?

Permit #00-BSP-944 for the RCI 2 furnace was issued December 10, 2000 with a TSP emission limitation of 1.51 lbs/hr. If recent stacks tests demonstrate this furnace cannot comply with its current PM emission limitation of 1.51 lbs/hr, does this mean this furnace has also violated its permit for over 3 years and the DNR should issue a Notice of Violation?

The DNR's supporting preliminary determinations for both Operation Permit #113014220-P01 and Construction Permit #00-BSP-944 both concluded that MKC would comply with the air quality standards. Results from the supporting modeling analyses for these permits all indicate that MKC was barely able to comply with the air quality standard of 150 ug/m^3. If the TSP emissions from each of these furnaces are 8.5 rather than 1.5 lbs/hr used for these earlier modeling analyses, does this mean MKC was improperly issued air quality permits since it has been violating the TSP air quality standard for over 3 years?

The report for the October 2003 stack tests explain that chlorine was injected immediately after the introduction of scrap aluminum. However, Operation Permit #113014220-P01 includes a specific

requirement under for MKC to separate the addition of scrap metal and injection of chlorine by five minutes to minimize the conditions favorable to the formation of dioxin and furan emissions. Under Condition I.B.6.(b) (1) it states: "A separation of no less than 5 minutes shall occur between the introduction of chlorine to the furnace and the charging of materials other than aluminum T-bar, sow, ingot, billet, pig and alloying elements. [s. 285.65(3) and s. NR 445.04(3)(b), Wis. Adm. Code]" Operation of the RCI 1 furnace during the stack test without the five minute delay between chlorine introduction and charging of materials was a violation of the current permit.

If our conclusions regarding the applicability of the PSD regulations to this project are correct, then MKC projects since the introduction of chlorine demagging operations in the mid-1990's had failed to comply with the PSD requirements.

Permit #03-POY-328 should not be issued until the DNR has issued a Notice of Violation to MKC and changes are made to assure future violations will not occur.

8. COMPLIANCE WITH ENVIRONMENTAL JUSTICE PROGRAM

In 1994, President Clinton signed an Executive Order12898 which directs Federal Agencies to incorporate Environmental Justice principles as part of their day-to-day operation by identifying and addressing"disproportionately" high and adverse human health and environmental effects of programs, policies activities on minority populations and low-income populations."

The east side of Madison, Wisconsin is home to the many low income and minority families. Lowell Elementary School, located only 1 block from the MKC foundry, participates in the federal Title I education program, receiving funds to ensure that poor and educationally disadvantaged students have additional support to help them meet high academic standards.

The east side of Madison also has the burden of dealing with the environmental impacts of the majority of the city's industries and sources of pollution. In addition to MKC, other industries and pollution sources impacting the neighborhood include the following:

- Dane County Regional Airport has its main flight path over the neighborhood surrounding MKC and receives the majority of its noise complaints from this neighborhood;

- A recent WDNR odor survey demonstrated that the neighborhood is impacted by the Oscar Meyer Foods Corporation meat smoking operations and Webcrafters, Inc. web offset printing operations.

- Other east side industries reporting to the national toxics release inventory include Royster-Clark Inc.; Berntsen Brass & Aluminum Foundry; Mautz Paint Company; Rayovac Corporation; Rhodia Inc.; Safety-Kleen Systems; and Vendura Industries.

- During the 1990's Wisconsin & Southern Railroad moved its train switching operations to the east side of Madison, dramatically increasing freight train noise, traffic disruptions and safety hazards to east side residents.

- Our neighborhood is a major thoroughfare for commuter traffic flowing from bedroom communities to downtown Madison offices.

Due to the composition of the population in the area surrounding MKC and the disproportionate amount of other environmental pollution which already impacts our quality of life, the Environmental Justice program should be applied to all air quality permits issued to the MKC foundry. Each USEPA regional office as well as the WDNR have contacts to evaluate the applicability of this EJ program. However, there is no discussion of the EJ program in the support documents for the operation permit.

Issues which should be addressed during permitting are described at the USEPA Region 5 web site for the EJ program at: http://www.epa.gov/reg5ogis/r5ej/index.htm

Here are suggestions for implementing the Environmental Justice Program for permits issued to MKC:

1. Monitoring. Include permit conditions that set additional monitoring requirements, and require the permitted facility to make monitoring data more readily accessible to the impacted community.

The permit should include extensive testing and monitoring procedures which will verify continued compliance with permit emission limitations and the assumptions used as a basis for issuance of the operation permit. The WDNR has the discretion to require more frequent stack testing and use of continuous emissions monitoring. Every effort should be taken to assure failsafe mechanisms and procedures are required by the permit to verify continuous compliance by MKC.

2. Risk reduction. Any additional steps which will reduce risk from a permitted activity are appropriate, where the impacted population already faces a heightened risk of harm to human health and the environment. Include improved or more stringent standard operating procedures to reduce releases and exposures.

Regulatory discretion and every effort should be made to encourage MKC to use available air pollution control technologies and methods to reduce its air pollution discharges in the surrounding neighborhood. The permit should recognize MKC as subject to the PSD regulations and incorporate its air pollution control requirements. The draft permit allows hydrogen chloride emissions from the aluminum furnaces which are 22 times greater than a recent PSD approved permit. The permit should recognize available control technology and require MKC to control these emissions.

State of the art dispersion modeling procedures should be used to assure protection of the air quality standards. For the draft permit, the DNR has used simplistic modeling procedures which failed to consider the urban setting of MKC, the differences in elevation between MKC and the surrounding neighborhood, the close proximity of homes with backyards abutting the foundry buildings, and sensitive receptors like Lowell Elementary School. The DNR has the authority and skills to require the use of more precise modeling procedures. The modeling analysis supporting the issuance of the permit should be repeated. Prior to conducting this analysis, there needs to be a comprehensive survey of emissions sources at the MKC foundry and their release points. This will assure that all locations of air pollutant discharges are included in the analysis. While stacks may exhaust the

majority of the foundry emissions, releases through windows, doors and other building opening will immediately expose neighbors living adjacent to the foundry. The new analysis should incorporate more accurate procedures to assure the maximum concentrations are predicted. If the predictions are more accurate, dispersion becomes a less viable option compared to the use of control equipment or control methods.

The DNR should use its authority and discretion to conclude that MKC is a cause of objectionable odors within the neighborhood and require corrective action to reduce exposure to all sources of odors from the MKC foundry.

3. Release preparedness. Additional requirements for emergency preparedness should be used to address the risk from an accidental or unpermitted release.

The Risk Management Plan for MKC chlorine storage concludes that an accidental release of chlorine would affect over 16,000 people. To warn residents of an accidental release, MKC proposes to contact the 911 emergency telephone number. This warning method is inadequate and does not provide adequate protection of neighborhood and city residents. This is an especially dangerous situation for residents which live close to storage and handling areas. The RMP submitted by MKC should be improved prior to issuance of the Title V operation permit.

All chlorine storage and handling areas should be equipped with monitoring and warning equipment to detect releases, and immediately warn the neighborhood of the accident. It should not be left to the discretion of MKC to decide if local authorities or surrounding neighbors should be warned. If the permit incorporates sufficient control and compliance demonstration methods to assure the protection of the surrounding neighborhood, it will reflect the true cost of the air pollution discharges and provide incentives for MKC to find cleaner and safer manufacturing alternatives. Everyone would benefit from this change to less polluting production methods.

If DNR staff have any support for the goals of the environmental justice program, it should use its resources and discretion to protect nearby residents.

Attachment D
CAM Comments #2

Clean Air Madison
cleanairmadison@sbcglobal.net

February 26, 2004

Mr. Paul Yeung, Review Engineer
Bureau of Air Management
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707

Subject: Additional Comments on Draft Permit #03-POY-328
Madison-Kipp Corporation
Madison, Wisconsin

Dear Mr. Yeung:

On February 6th, the Department of Natural Resources (DNR) held a public hearing on a proposal from Madison-Kipp Corporation (MKC) to increase air pollution emissions from its aluminum foundry on Atwood Avenue. All speakers opposed the new discharges and questioned DNR staff on whether the health of residents surrounding the foundry was being protected. Speakers cited numerous health complaints and stressed that additional air pollution was unacceptable. We encourage the DNR to recognize the current air quality problems in the vicinity of the foundry, and to use its discretion and skills to assure that these new discharges are thoroughly evaluated and controlled to the greatest extent possible.

Please find enclosed additional comments which supplement those provided in our February 6th letter. Thank you for the opportunity to comment on the pending construction permit. Please contact us if you have any questions during your review of these comments.

Sincerely,

Enclosure

Clean Air Madison
cleanairmadison@sbcglobal.net

cc: L. Eagan, Director, WDNR Bureau of Air Management
S. Rothblatt, Director, EPA-Region 5, Air & Radiation Division
T. Dawson, WDOJ Environmental Protection Unit
Mayor D. Cieslewicz
Representative M. Miller
Governor J. Doyle

One of the benefits of applicability of the PSD regulations is the requirement under NR 405.08 to use Best Available Control Technology (BACT). BACT would require the use of state of the art control technology rather than relying on the 30-year old emission limitations under NR 415. While a proper BACT analysis would identify all available emission control options, background to the national Maximum Available Control Technology requirements for secondary aluminum processing plants recommends the use of lime injection and baghouse control technology to control emissions of hydrogen chloride and particulate matter. To verify the feasibility of installing this type of control system, a cost estimate was obtained for a lime injection - baghouse control system. A system sized for the flow rate and emissions from the two furnaces would cost $650,000. Assuming a 20-year life and 3% interest, annualized costs for this control system would be $43,680 per year.

Draft Permit #03-POY-328 allows emissions from the two furnaces of 17 lbs/hr of PM and 64.9 lbs/hr of HCl. Installation of the lime injection-baghouse control system will reduce emissions to 1.7 lbs/hr of PM and 1.9 lbs/hr of HCl, removing 90% of the PM and 97% of the HCl.

Draft Permit #03-POY-328 limits annual emissions of PM and HCl to 74.5 and 10 TPY, respectively. The control system will reduce the emissions by 67.1 and 9.7 TPY, respectively, for a total of 107 TPY reduction in emissions.

Based on the cost estimate and emission reductions, the cost effectiveness for the lime injection-baghouse control system is $408 per ton of PM and HCl removed. This is easily within the cost effectiveness considered reasonable for BACT. Reductions in aluminum salt and dioxin/furan emissions are expected from this control system and further justify the use of this air pollution control system.

It should be concluded by the DNR that Permit #03-POY-328 cannot be issued because the two furnaces do not comply with the NR 405 PSD requirements, and are not equipped with BACT such as the lime injection-baghouse control system presented here.

If MKC is a major source under the PSD regulations, then all permits approved throughout the 1990's should be reviewed to verify compliance with the PSD requirements.

3. MODELING ANALYSIS IS NOT ADEQUATE.

In our February 6th comments, it was concluded that if an accurate modeling analysis was conducted for Permit #03-POY-328, the project would not comply with air quality standards and the proposed permit could not be issued. The Department's preliminary determination assumes that the foundry is located in flat, rural terrain, rather than surrounded by rolling, urban terrain with nearby multi-story homes, schools and businesses.

One significant issue is consideration of the multi-story buildings immediately adjacent to the foundry stacks and roof vents. There are existing homes and buildings near the foundry with upper level windows, balconies and roof top access. Lowell Elementary School is located one block from the foundry on elevated site, with second story windows open during the warmer months and a roof top vent intake for its ventilation system. Construction of new multi-story buildings continue in the neighborhood. Since issuance of the Title V operation permit to MKC in 2001, multi-story condominiums have been built on the corner of Atwood and Maple Avenues, only one block from

the foundry. New residential housing has been proposed directly north of the foundry as part of the Iron Works Development.

In a June 11, 1984 memorandum from USEPA, *Applicability of PSD Increments to Building Rooftops*, modeling compliance with the air quality standards at elevated locations is discussed, and it is concluded that:

"national ambient air quality standards are designed to protect the public health and welfare and apply to all ambient air which does include the rooftops and balconies of buildings accessible by the public."

Contrary to USEPA guidelines, the modeling analysis conducted by the Department for Permit #03-POY-328 only considered ground level concentrations, and does not consider compliance with air quality standards at elevated locations where residents in the surrounding neighborhood will be exposed. A copy of this memorandum is attached.

One approach for evaluating concentrations at elevated locations is the use of flagpole receptors. There may be other modeling methods available to accomplish the same goal. The Department's analysis using the ISC3 dispersion model for Permit #03-POY-328 is summarized in its preliminary determination. This estimated a maximum 24-hour average TSP concentration of 70.4 ug/m^3. Combined with the background concentration of 69.3 ug/m^3, the total predicted concentration is 139.7 ug/m^3, which is slightly below the 24-hour average air quality standard of 150 ug/m^3.

If the analysis is rerun using flagpole receptors of 6 meters (20 feet) to simulate exposure at upper floor windows, balconies, roof tops or ventilation intake vents, the same modeling runs predict a maximum 24-hour average TSP concentration of 167 ug/m^3. Combined with the background concentration of 69.3 ug/m^3, the total predicted concentration is 236 ug/m^3, which exceeds the 24-hour average air quality standard of 150 ug/m^3.

As noted in our February 6th comments, the DNR modeling analysis did not address changes in elevations. If the analysis is rerun using elevations and flagpole receptors of 6 meters (20 feet), the same modeling runs predict a maximum 24-hour average TSP concentration of 189.7 ug/m^3. Combined with the background concentration of 69.3 ug/m^3, the total predicted concentration is 259 ug/m^3, which exceeds the 24-hour average air quality standard of 150 ug/m^3.

The need to evaluate air quality standards at elevated locations and the acceptability of flagpole receptors as a modeling tool was also recommended in a February 17, 2004 email from Randall Robinson of USEPA Region V, who concludes:

"We do not recommend using flagpole receptors to calculate concentrations at a height above ground level (for example a 1.5 m breathing level height) under normal circumstances because it isn't necessarily a conservative assumption. However, we do have policy memos on SCRAM (e.g., June 11, 1984 letter) that talk about the definition of ambient air being "that portion of the atmosphere, external to buildings, to which the general public has access." The memos further discuss rooftop patios and balconies as being ambient air areas relevant to the NAAQS. In those ambient air situations, where the public has access, flagpole receptors could be used to estimate concentrations at the appropriate elevations."

The modeling analysis used to support issuance of Permit #03-POY-328 does not account for the unique urban area surrounding the MKC foundry. If an appropriate analysis is conducted, predicted concentrations exceed the air quality standards and Permit #03-POY-328 cannot be approved.

4. NEED FOR MORE RIGOROUS TESTING AND MONITORING.

MKC has applied for Permit #03-POY-328 because current furnace limitations have been exceeded. Residents have previously raised the issue of inadequate emission estimates during issuance of prior permits, but DNR staff responded that sufficient testing had been conducted to accurately estimate the MKC emissions. To assure no future violations occur, the new permit should include more testing and monitoring, including the use of continuous emissions monitoring equipment for visible and hydrogen chloride emissions.

5. NEED FOR GREATER EVALUTION OF DIOXIN AND FURAN EMISSIONS

It was noted in our February 6th comments that the DNR has conducted no evaluation to determine if the dioxin and furan emissions from the two furnaces pose any risk to human health. At the February 6th public hearing, concerns were raised about the long-term risks due to exposure to these emissions, either through inhalation or through other routes of exposure. Residents were concerned about deposition in the surrounding neighborhood, including on the playground at Lowell Elementary School, and on nearby backyard and community gardens.

The DNR has conducted multi-pathway risk assessments to evaluate the issuance of air pollution control permits from other sources of dioxin and furan emissions. This type of analysis should be conducted to determine if the proposed furnace emissions pose any significant hazard to surrounding residents.

6. NEED FOR EVALUATION OF AIR QUALITY STANDARD FOR $PM_{2.5}$

The DNR has proposed to issue Permit #03-POY-328 based on compliance with the 150 ug/m^3 air quality standard for total suspended particulate matter (TSP). As noted in our February 6th comments, this TSP standard was adopted by the USEPA as a national air standard in *1971*.

In 1997 USEPA adopted new air quality standards for particles less than 2.5 microns in size ($PM_{2.5}$). These new standards address the serious health effects of very small particles. The PM emissions from MKC are generated by the aluminum furnaces and condensation of die casting lube oil, so a large percentage of the emissions will be particles in this small size range. The new 24-hour average air quality standard is 65 ug/m^3 and the new annual average air quality standard is 15 ug/m^3.
To accurately assess the impacts of the foundry emissions, the DNR should compare the foundry impacts with the new, more restrictive $PM_{2.5}$ air quality standard.

The Department's analysis using the ISC3 dispersion model for Permit #03-POY-328 is summarized in its preliminary determination. The estimated maximum 24-hour average TSP concentration is 70.4 ug/m^3. Assuming all of the PM emitted by MKC is smaller particles, the impact of foundry operations, without considering background concentrations, exceeds the new air quality standard of 65 ug/m^3 for $PM_{2.5}$.

According to Nancy Mayer (919/541-5390), USEPA will be proposing this spring draft regulations for incorporating the $PM_{2.5}$ air quality standards into new source review permit programs. Considering the many health complaints attributed to MKC emissions, DNR staff should recognize the failure of its current TSP air quality standard and modeling procedures to protect nearby residents. Using the proposed $PM_{2.5}$ air quality standard to evaluate the issuance of Permit #03–POY-328 will better protect the public than the 30-year old TSP standard.

7. VIOLATION OF PERMIT LIMITATIONS AND AIR QUALITY STANDARDS

MKC has requested an increase in the particulate matter emissions from 3.0 to 17.0 pounds per hour and an increase in the aluminum salts from 1.3 to 4.0 pounds per hour. October 2003 test results show that MKC is violating its current emission limitations for particulate matter and aluminum salts suggesting the need for higher emission limitations.

At the February 6th public hearing, DNR staff indicated the issuance of Permit #03-POY-328 will address the violation of current emission limitations. There are numerous issues raised during the public comment period which demonstrate that Permit #03-POY-328 cannot be issued and MKC will continue to be in violation of its current emission limitations. The current limitations were established after considerable time and effort were expended by DNR staff to verify these lower limitations were necessary to protect air quality standards, and by surrounding residents reviewing the DNR analysis. DNR staff should enforce current emission limitations and refer its Notice of Violation to the Department of Justice.

8. COMPLIANCE WITH ENVIRONMENTAL JUSTICE PROGRAM

In our February 6th comments, DNR staff were encouraged to implement the Department's and USEPA's Environmental Justice (EJ) program and require a higher level emissions control, monitoring and risk reduction from MKC. The EJ program is based on the federal law of the Title VI of the Civil Rights Act of 1964 which the State of Wisconsin is obligated to enforce. We recommend DNR staff contact Alan Walt at the USEPA Region V Office of Regional Counsel (312/353-8894) to assure that issuance of Permit #03-POY-328 complies with the requirements of EJ program and Title VI.

December 4, 1998

MEMORANDUM

SUBJECT: Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability

TO: Addressees

FROM: Thomas C. Curran, Director
Information Transfer and Program Integration Division (MD-12)

The purpose of this memorandum is to provide guidance in making case-by-case determinations of whether die casting plants should be categorized generally as secondary aluminum recovery plants or whether the processing steps within a die casting plant might be considered as a secondary aluminum support facility. This is in response to a request by the North American Die Casting Association (NADCA) for guidance on the issue of whether aluminum die casting facilities are secondary metal production plants under the Prevention of Significant Deterioration (PSD) regulations. Such guidance has bearing on the classification of aluminum die casting facilities as major sources for the reason that secondary metal production plants are subject to a 100-tons-per-year major source threshold rather than the 250-tons-per-year threshold applicable to many other types of sources. This memorandum contains EPA's analysis of the issues raised by NADCA's request.

The EPA agrees with NADCA that aluminum die casting facilities typically need not be considered secondary metal production plants. As a general matter, aluminum die casting facilities do not use the feedstock, do not engage in the elaborate processes, and do not produce the end products that are characteristic of facilities engaged in secondary aluminum recovery.

While information supplied by NADCA indicates that some die casting facilities employ certain process steps similar to those employed by secondary metal production facilities, EPA agrees with NADCA that these process steps are distinguishable in most cases. In exceptional cases, the process steps that cannot be distinguished from secondary metal production meet the criteria for a "nested" support facility that by itself is subject to the 100-tons-per-year major source threshold. Finally, it is possible that a die casting facility could be integrated with a secondary aluminum recovery process to such an extent that the principal products or activities would constitute a secondary metal production plant. The analysis that follows discusses the critical factors that should be evaluated in determining whether a die casting facility satisfies the rather specific and unique qualifications of being a secondary aluminum recovery plant or if certain process steps constitute a "nested" secondary aluminum recovery support facility.

The policies set forth in this document are not judicially reviewable. They do not change existing EPA regulations, are intended solely as guidance, do not represent final agency action, and cannot be relied upon to create rights enforceable by any party. Further, this guidance is not intended to reverse or supersede any case-by-case determination made previously by an EPA Regional Office, State or local permitting authority.

The Regional Offices should send this memorandum to the States within their jurisdiction. Questions concerning specific issues and cases should be directed to the appropriate Regional Office. The Regional Office staff may contact Mr. Dennis Crumpler of the Integrated Implementation Group at (919) 541-0871 if they have any questions. This document is available on the TTN Web at http://www.epa.gov/ttn/nsr/poly_gui.html. Users unfamiliar with this web site may obtain help by calling the TTN help line at (919) 541-5384.

Addressees:
Director, Office of Ecosystem Protection, Region I
Director, Division of Environmental Planning and Protection, Region II
Director, Air Protection Division, Region III
Director, Air, Pesticides, and Toxics Management Division, Region IV
Director, Air and Radiation Division, Region V
Director, Multimedia Planning and Permitting Division, Region VI
Director, Air, RCRA, and Toxics Division, Region VII
Assistant Regional Administrator, Office of Partnership and Regulatory Assistance, Region VIII
Director, Air Division, Region IX
Director, Office of Air, Region X

The EPA's Analysis of Die Casting Operations and Information Supplied by the North American Die Casting Association

Should die casting operations be classified as secondary metal production plants?

Our analysis suggests that die casting operations generally need not be classified as secondary metal production plants. In most cases, the processes and products of the two types of operations are sufficiently distinct to warrant this determination.

The Standard Industrial Classification (SIC) Code Manual provides the starting point for determining which pollutant-emitting activities should be considered as part of the same industrial grouping for the purposes of defining a stationary source. The exact term "secondary metal production plant," which is identified in Section 169 of the Clean Air Act as an industrial source category that is subject to a 100-ton-per-year major source threshold, does not appear in the SIC Code Manual. The SIC Code Manual does list, however, the category "Secondary Metal and Refining of Nonferrous Metals." This category includes sources primarily engaged in recovering nonferrous metals and alloys from new and used scrap and dross or in producing alloys from purchased refined metals.

The SIC Code Manual does not give a detailed technical description of the process that is used in secondary metals recovery. To gain a better description of the secondary aluminum process, we consulted the technical literature, including the McGraw-Hill Encyclopedia of Science and Technology and Compilation of Air Pollution Emission Factors, Fifth edition (AP-42) Section 12.8. From these references, we found that conventional secondary aluminum processing includes the following steps: receiving every conceivable kind of post-consumer scrap and recyclable waste aluminum[1]; drying the scrap; shredding or grinding; and burning off organic and other volatile residues such as paint or oil; and sweating and decanting to separate the aluminum from other metals in the scrap. Most secondary aluminum processes use a reverberatory furnace to sweat or decant the scrap, but crucible furnaces can also be used for small, batch operations. After the preliminary separation, the molten aluminum still contains a significant amount of alloyed metals. These metals are removed by smelting while still in the reverberatory furnace. During this part of the process, the molten mixture is "fluxed" with chloride salts and/or chlorine gas to separate undesirable metals ("demagging") and impurities. Fluxing rates are typically in the range of 5-7 percent of the mass of aluminum that is smelted. Hydrogen gas is removed (degassed) by bubbling an inert gas through the melt. After

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[1]Post-consumer scrap aluminum is any aluminum product or intermediate which has been discarded by consumers after use. Examples would be broken ladders, discarded storm doors and windows, old gutters, empty cans, broken or otherwise unusable auto engine and body parts, home and building siding or inside panels in demolition waste, electrical wire, and demolished mobile home siding and parts. Post-industrial scrap, which includes dross from smelting and refining and any other scraps that are too dirty or too far out of specification to recycle directly back into product manufacturing process, is added to post-consumer scrap for recovery by secondary smelters.

impurities are removed, certain metals or minerals are added to bring product characteristics or quality back to customer specification. The process concludes with a final filtration, followed by casting the recovered aluminum into ingots, block (called billets), bars, and shot.

Die casting involves melting metal and then forcing it with pressure into molds through a series of channels and vents to form aluminum parts and products. To obtain detailed information regarding the die casting process, EPA met with NADCA and some of its members. EPA's Region V staff also obtained additional information during a visit to a die casting facility. From this, it appears that the typical die casting facility uses high quality metal of a specified alloy and purity as feedstock, in the form of ingots or billets, which are brought into the plant at ready-to-cast quality. The feedstock is melted in a furnace (of various types, but most typically a reverberatory furnace). As much as 1 percent by weight of a purifying flux is added to the furnace prior to receiving the charge to control oxidation and to maintain alloy specifications. Once the metal is heated and exposed to air in the furnace, a small amount of molten metal oxidizes to form dross that floats to the surface. The dross is skimmed off or filtered from the molten metal and sold to smelters. The molten aluminum may also be degassed of hydrogen by injecting nitrogen or argon gas into the melt. Trimmings from cast parts, turnings from drilling and milling the castings, and defective castings or quality rejects are recycled to the furnace.

In addition to the use of ingots or billets for feedstock, some die casting facilities purchase returns from other facilities in the die casting industry. Where the composition of the returns can be specified and controlled contractually, die casters can incorporate recyclable alloy grade aluminum into their feed without extensive fluxing or alloying. As a result, such inter-facility transfers of recyclable alloy grade aluminum have no different effect on the die casting facility's operations than the processing of its own in-house returns. In contrast, few die casters generate feedstock from post-consumer scrap or unspecified aluminum scrap from junk dealers because of quality control concerns.

With respect to plant output, die casters produce a marketable aluminum part or product. A facility may temporarily cast aluminum into intermediate forms, such as sows (large round blocks), for the purpose of storing its residual process raw material when equipment is shut down for maintenance or repair. This intermediate is not sold but fed back to the process upon restart.

As the above description illustrates, conventional secondary aluminum recovery plants and die casting facilities differ in several respects. Die casters do not typically produce feedstock from post-consumer or unspecified aluminum scrap. As a result, most die casters do not engage in a number of the cleaning and pretreatment steps typical of secondary aluminum recovery such as pyrolitic cleaning, sweating, and thermal separation. Die casters also use a relatively small amount of flux--less than one percent by weight of the processed aluminum--primarily to remove products of oxidation in the melt rather than to remove large portions of undesirable metals. Finally, die casters produce a marketable aluminum part or product rather than an intermediate form of feedstock such as billets, bars or ingots for sale to or use by mills that perform rolling, extrusion, drawing forging or casting.

As a result of this analysis, EPA will presume that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required; and (2) the facility does not produce intermediate forms of feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use by other facilities.

If a plant produces cast aluminum parts but uses post-consumer or unspecified aluminum scrap as a feedstock, it will be a closer question whether the plant's primary activity is secondary aluminum recovery. The quality and origin of the post-consumer or unspecified aluminum scrap, the use of thermal cleaning or separation, as well as the amount used relative to the amount of specified-grade alloy feedstock, will have some bearing on whether secondary aluminum recovery is the primary activity.

Does the die casting facility utilize steps that would be considered secondary aluminum processing as a support facility?

Notwithstanding a determination that a facility's primary activity is not secondary aluminum recovery, the use of any post-consumer or unspecified aluminum scrap would result in a determination that certain operations at a die casting facility should be considered a "nested" secondary aluminum support facility. When determining whether a source contains a nested secondary aluminum support facility, the specific process steps of which would be subject to a 100 tpy major source threshold, a source's end product is not necessarily a determining factor.

The EPA addressed this issue in the context of secondary aluminum recovery at a finishing mill in a July 28, 1989 memorandum concerning Golden Aluminum from William B. Hathaway, Division Director, Air, Toxic and Radiation, EPA Region 6, to Steve Spaw of the Texas Air Control Board. The EPA's position was reaffirmed in subsequent letters of July 20, 1990, from Robert E. Hanneschlager to Jeff Civins and again in a September 3, 1991 letter from William G. Rosenberg to Carol Dinkins. With respect to the Golden Aluminum facility, EPA found that the source, even though it produced a specific end-product other than aluminum ingot or block, also engaged in recovering aluminum from used, scrap aluminum that was collected from outside the facility, with a process that included several classical secondary metal process steps identified above. Those secondary metals process steps were determined to be a nested support activity that was subject to the major source threshold of 100 tons per year specified by Congress in the Clean Air Act.

The EPA will presume that the recycling steps at a die casting facility do not constitute secondary metals production in a support facility capacity only under narrow circumstances. That is, if the facility recycles only in-house returns with original feedstock and uses the simple melting, fluxing and degassing process steps described above, then EPA will presume that the facility does not engage in secondary aluminum recovery. In-house returns of specified quality that are purchased by contract from other die casting facilities also satisfy the feedstock criteria for this presumption. In any case where this presumption is rebutted, the total emissions from all the recycling steps must be compared against the 100-ton-per-year major source threshold.

United States Environmental Protection Agency
Washington, D. C. 20460

June 11, 1984

MEMORANDUM

SUBJECT: Applicability of PSD Increments to Building Rooftops

FROM: Joseph A. Cannon /s/
Assistant Administrator
for Air and Radiation

TO: Charles R. Jeter
Regional Administrator, Region IV

The following is in response to your letter of November 10, 1983, concerning issues which you felt required review for national consistency relating to a new source review for an Alabama Power facility in downtown Birmingham, Alabama.

On September 29, 1983, your office informed the State of Alabama that a source's compliance with the PSD increments must be measured on the tops of buildings, as well as at ground level. Since then we have discussed the question extensively among ourselves and with representatives of the State of Alabama and the company. For the reasons that follow, I do not believe we are in a position to definitively assert that PSD increments apply to rooftops without further information as to the consequences for the PSD system as a whole. Accordingly, I recommend that we inform Alabama that we do not now require that compliance with PSD increments be measured at the tops of buildings. A State may, of course, adopt such an approach if it so desires.

Between 1970 and 1983, it appears to have been general EPA practice to determine compliance with both NAAQS and PSD increments at ground level, not at roof level. On March 18, 1983, however, Kathleen Bennett, in a letter to the State of New York, determined that the "national ambient air quality standards are designed to protect the public health and welfare and apply to all ambient air which does include the rooftops and balconies of buildings accessible by the public."

I believe this conclusion was correct. Apartment balconies, rooftop restaurants, and the like present a potential for human exposure that the primary ambient air quality standards should be interpreted to address.

Given this conclusion, one could argue, based on the text of the relevant regulations and the Clean Air Act, that the PSD increments apply wherever the NAAQS apply, and that both must apply throughout the "ambient air." However, the PSD system, unlike the NAAQS system, does not aim at achieving one single goal. Rather it represents a balance struck first by Congress between a given level of protection against degradation and a given potential for economic growth. It appears that the calculations on which that balancing judgment was based all assumed that PSD increments would be measured at ground level.

A number of state officials who are now administering PSD have argued to me that by measuring PSD increments on rooftops as well as at ground level, EPA would make the PSD system appreciably more stringent than Congress contemplated. Although major urban areas are all Class II areas, this approach, it is argued, could result in constraints on growth comparable to those that apply in Class I areas - national parks and wilderness areas. Such an outcome would not, it is argued, be consistent with Congressional intent.

In these circumstances, I think that preserving the status quo is particularly advisable because:

ø It is likely that Alabama did not contemplate adopting a "rooftops" approach to PSD when it took over the PSD program. That expectation, though not decisive, does provide some reason not to change the situation without formal rulemaking.

ø The consequences of a erroneous decision to consider increment consumption on rooftops will be more severe than those of an erroneous decision not to consider them. The adoption of such an approach will present at least a procedural, and, probably a substantive obstacle to development in urban areas, while in its absence air quality will still be protected by the NAAQS, by the PSD increments supplied at ground level, and by the other aspects of PSD review such as Best Available Control Technology.

Therefore, I have concluded that since the State of Alabama has authority under an approved implementation plan for administering the PSD program within Alabama, it is their responsibility to apply this principle of maintaining the status quo to this case, taking all the relevant facts into account.

Please advise the State of Alabama of the Agency's position on these points as our response to the issues which they raised in meetings with both of us.

cc: A. Alm
P. Angell
T. Devine
G. Emison
W. Pedersen
P. Wyckoff
S. Meiburg

Attachment E
WDNR Response to Public Comments

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: April 24, 2004 FILE REF: 4560

TO: Lloyd Eagan – AM/7

FROM: Brad Pyle – SCR – Air Management Program

SUBJECT: Summary of and Responses to Public Comments on the Air Pollution Control Permit Application for Madison-Kipp Corp., Madison, Dane County (Permit #03-POY-328)

On February 6, 2004, DNR held a public hearing concerning the proposed air pollution control construction and operation permits #03-POY-328 and #03-POY-328-OP for the proposed modification of the RCI-1 AND RCI-2 aluminum melting furnaces for Madison-Kipp Corporation. DNR was represented at the hearing by Bradford Pyle, and Marcia Penner. 44 appearance slips were filed at the hearing, 3 in favor, 33 opposed, 2 as interest may appear, and 6 did not check any box.

DNR has carefully reviewed and considered all comments it has received. This memo summarizes and responds to all written comments received during the 30 day public comment period, extented comment period, and verbal comments received at the public hearing for these permits.

PUBLIC HEALTH

1) Comment –Many people are concerned that their health problems are caused by Madison-Kipp Corp. Some people are constantly in fear of emissions from Kipp. Many people fear the effects of these emissions on their family and neighbors. Some people mentioned knowing of people who have died or had severe illness in the neighborhood.

Response - All health related comments received at DNR have been forwarded to the Madison Department of Public Health. The Madison Department of Public Health has not received evidence of human illness that would be sufficient to support a health study despite requests by the neighborhood. No ambient air quality exceedance attributable to Madison-Kipp Corp. has ever been recorded at the particulate monitor near the facility. Madison-Kipp Corp. is required to maintain records to show that all emission limits and permit conditions (set to protect the health and welfare of the public) are being met.

2) Comment Air pollution rules are 30 years old and do not protect the health of our diverse population.

Response Under the Clean Air Act, EPA establishes air quality standards to protect public health, including the health of "sensitive" populations such as people with asthma, children, and the elderly. The ambient air quality standard for Total Suspended Particulates (TSP) is a state of Wisconsin standard and is set to protect human welfare, such as preventing soiling or nuisance dust conditions.

ODORS

Comment - The odor problems associated with Madison-Kipp have not been resolved. DNR should further investigate the source of odors.

Response - An odor survey was conducted in the area around Madison-Kipp Corporation in the fall of 1999. Section NR 429.03(2)(b), Wis. Adm. Code, is the rule that gives DNR the authority to conduct such an odor survey. The survey did not result in the conclusion that Madison-Kipp Corporation is in violation of s. NR 429.03(1), Wis. Adm. Code.

NOISE

DNR does not regulate noise.

PUBLIC COMMENT PERIOD

Comment The comment period should be extended.

Response The comment period was extended.

PUBLIC HEARING TIMING

Comment Need for more accessible public hearing. Request for additional hearings.

Response No additional hearings will be held for this permit action.

PROPERTY DAMAGE

Comment - My house has been soiled by Madison-Kipp's emissions. I have to clean the inside and outside regularly.

Response - To date, and after extensive sampling, DNR has no evidence that Madison-Kipp Corp. has caused such conditions.

DNR AUTHORITY TO REGULATE AIR POLLUTION

1) Comment I ask the DNR to oblige Madison-Kipp to provide to the public all internal memoranda related to their proposal so as to: 1) establish their motivation and rationale for requesting a five-fold increase in particulate emissions; 2) establish their motivation for reducing chlorine use but not chlorine emissions; 3) make public the MKC cost-benefit analysis for changing emission levels; 4) demonstrate on-going insurability to cover all liability and damage claims from area residents in the event of adverse consequences of plant operation; 5) account for their present violation of environmental regulations; and 6) demonstrate an attitude of compliance with environmental regulations.

Response DNR has no authority to require Madison-Kipp to produce internal memoranda. Madison-Kipp has requested the particulate matter emission limitations allowed by Wisconsin Administrative Code. The permit, as proposed, brings Madison-Kipp into compliance with emission limits for particulate matter and aluminum salts.

2) Comment Need for evaluation of air quality standard for PM 2.5. The DNR needs to conform to the "stricter rules for particulate emissions adopted by the federal [EPA] in 1997" and enforce these rules for the good of the Shenk-Atwood community and the greater Madison area.

Response The air quality standard for PM 2.5 has been proposed to be adopted by the State of Wisconsin. The state has to first adopt the standard in a Wisconsin rule before it can establish any emission limits based on the standard.

3) Comment Reduce emissions with filters.

Response DNR has no authority to require filters.

4) Comment The neighborhood should be able to vote on whether Kipp should be able to have increased allowable emissions. Passage without approval of the neighborhood leads to adversarial relationship

Response The Criteria for Permit Approval in Section 285.63, Wis. Stats., sets forth the specific criteria that must be met for a permit to be approved. DNR must issue a permit if DNR finds that: the source will meet emission limitations;
the source will not cause nor exacerbate a violation of an air quality standard or ambient air increment and the source will not preclude the construction or operation of another source for which an air pollution control permit application has been received.

5) Comment Before any permit is issued, I would like DNR to complete additional testing of the furnace discharges. There is a need for more rigorous testing and monitoring.

Response DNR has determined at this time that further testing and monitoring is not necessary.

6) Comment I am upset that the Department of Natural Resources appears to be reluctant to play a strong monitoring or regulatory role with respect to the Kipp factory. I ask the DNR to bring all of its expertise, earnest good efforts, and regulatory authority to bear on the issues so as to guarantee that ALL environmental dimensions of MKC's current operation and projected operation be made transparent and subject to the highest level of public and scientific scrutiny. What can we do or say to get the DNR to exercise it's authority?

Response DNR has exercised its authority by: issuing permits to regulate Kipp's emissions, requiring testing of emissions, and issuing a Notice of Violation when emissions were excessive. DNR believes that Kipp will be in compliance with air pollution laws when the new permit is issued.

8) Comment Kipp has received multiple permits in the last several years which have authorized incrementally higher amounts of emissions. I have to believe that if these requests were presented as part of one application, DNR would require a higher level of abatement than has been the case with the several smaller requests. I believe that DNR should consider this application in the context of all Madison Kipp's recent expansions and require that higher level of compliance.

Response DNR would not have had the authority to require a higher level of abatement if all the permit requests had been combined. DNR would have allowed the proposed higher emission limits if Madison-Kipp had requested them to begin with.

9) Comment Please consider Kipp's impact on indoor air pollution

Response DNR does not regulate indoor air pollution or pollution inside of buildings.

VIOLATION OF PERMIT LIMITATIONS AND AIR QUALITY STANDARDS

1) Comment Before any permit is issued, I would like DNR to issue an NOV to Kipp for current violations.

Response – A Notice of Violation was issued to Kipp on February 2, 2004

2) Comment Madison-Kipp has exceeded air quality standards for over 3 years.

Response DNR has no information to support the claim that Madison-Kipp has exceeded air quality standards. No ambient air quality exceedance attributable to Madison-Kipp Corp. has ever been recorded at the particulate monitor near the facility. DNR has determined that no ambient air quality standard was exceeded during the recent testing that resulted in the Notice of Violation issued to Kipp on February 2,

2004.

3) Comment I ask the DNR to clarify and justify why a company presently in violation of environmental restrictions is allowed to make new requests for permits and why DNR would have an expectation that a violating party would honor the terms of a new permit.

Response This permit action is directly related to testing required by a existing construction permit. The required testing determined that Madison-Kipp could not meet the limits they had proposed. Madison-Kipp has proposed higher limits that are acceptable to the DNR and are allowed by the Wisconsin Administrative Code.

EVALUATION OF DIOXIN AND FURAN EMISSIONS

1) Comment Have you truly examined the risks of dropping the separation of metal and chlorine addition to the furnaces be separated by five minutes?

Response Testing has shown that Madison-Kipp can meet the 2,3,7,8-tetrachlorodibenzo-*p*-dioxin limit without the separation requirement. DNR has determined that the proposed increased allowable particulate matter emissions will not cause an exceedence of ambient air quality standards.

2) Comment I have reviewed the documents posted on the DNR Web site related to pending regulatory decisions about Madison-Kipp. It appears to me that not enough information has been provided for the potential hazards of these proposed changes to be judged. No information is provided about the chemical nature of the particles.

Response - Based on the permit application, description of raw materials and proposed permit requirements, the hazardous air pollutants expected from these operations have been reviewed. Chlorine, hydrogen chloride, aluminum soluble salts, 2,3,7,8-tetrachlorodibenzo-*p*-dioxin, and particulate matter were found to be the potential pollutants emitted at Madison-Kipp Corp. that the DNR has the authority to regulate.

3) Comment - The company has performed stack emissions testing that showed emissions of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) was much less than the table value in NR 445 for the compound.

Response Madison-Kipp performed stack testing for TCDD equivalents. TCDD equivalents include 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) and other congeners within the same dioxin family. The stack test emission rate was less than that allowed for TCDD alone, demonstrating that emissions of TCDD are also below the regulatory limits. Madison-Kipp shows compliance with the limit by using an emission factor for TCDD equivalents.

PSD REGULATIONS

1) Comment - Why is Kipp still considered a minor source for Prevention of Significant Deterioration (PSD) with respect to Chapter NR 405, Wis. Adm. Code?

Response – Chapter NR 405, Wis. Adm. Code applies only to new major stationary sources and major modifications to major sources. Madision-Kipp is not a major source under the definition listed in NR 405.02(22), Wis. Adm. Code, and therefore PSD review is not required. Madison-Kipp is not a secondary metal processor.

2) Comment - DNR should clarify why Madison-Kipp is not considered a secondary metals processing facility.

Response – Secondary aluminum processors recycle aluminum from aluminum containing scrap. Madison-Kipp Corp. obtains their aluminum materials from secondary aluminum processors. The federal air toxics maximum available control technology (MACT) rule for secondary aluminum processors does not apply to manufacturers of aluminum diecastings that melt no materials other than clean charge and materials generated within the facility and that also do not operate a thermal chip dryer, sweat furnace or scrap dryer/delaquering kiln/decoating kiln. Facility allowable emission of Federal HAPS are less than 10 and 25 TPY. Therefore, the MACT rules do not apply to this facility. EPA guidance titled "Treatment of Aluminum Diecasting Operations for the Purpose of New Source Review Applicability" supports the determination that Kipp is not a secondary metal processor with respect to PSD. In the analysis report attached to that EPA guidance memorandum, USEPA recognized that in an aluminum die casting facility, "As much as 1 percent by weight of a purifying flux is added to the furnace prior to receiving the charge to control oxidation and to maintain alloy specifications." Madison-Kipp uses less than 1 percent by weight of flux. In the same report, USEPA stated that "As a result of this analysis, EPA will presume that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required; and (2) the facility does not produce intermediate forms of feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use by other facilities." Madison-Kipp's operations meet these conditions.

THE MODELING ANALYSIS

Comment Before any permit is issued, I would like DNR to conduct a state of the art dispersion modeling analysis that accounts for surrounding homes, Lowell School and varied topography here. The proposed permits are based on an incomplete model that treats the facility location as a rural area when it is in fact urban. It also wrongfully assumes a flat topography when hilly terrain changes airflow patterns. An environmental consultant hired by Clean Air Madison ran an analysis that incorporated these considerations, and concluded that Madison-Kipp violated air standards. Why doesn't the DNR use the stricter models recommended by the EPA?

Response

1. Rural vs. Urban Dispersion Coefficients

The atmosphere within cities and large urban areas has different dispersion characteristics than rural areas. To account for this, separate dispersion equations were developed for urban and rural areas, and it is up to the modeler to determine which set to use in a specific application. To make this determination, USEPA recommends the use of a land-use procedure whereby a three-kilometer radius circle is drawn around the facility, and if certain land-use types make up more than 50 percent of the area within the circle, the modeling analysis should use urban coefficients. According to USEPA, the urban zoning classifications are heavy to light industrial, commercial, and compact residential. Compact residential is defined as close spaced houses (less than two meters) with garages in the alley, no driveways, and limited lawn sizes (less than 30% vegetation per lot). The circle drawn around MK includes parts of Lakes Mendota and Monona, parts of Truax Field, open areas near and beyond Stoughton Road, and parts of Monona. Within the circle, there are strips of commercial or industrial, but only towards downtown is there any compact residential. If the definitions of land use are strictly adhered to, then about 15% of the land within the circle is urban. If the definitions are stretched a bit, then possibly 24% of the area within the circle is urban. Either way, according to USEPA, the dispersion modeling analysis should use rural dispersion coefficients.

2. Flagpole Receptors

Within the dispersion model, receptors can be assumed to be at ground level, or above the terrain as if set on a pole. These are known as flagpole receptors. In speaking with USEPA Region V, who in turn spoke with USEPA headquarters, flagpole receptors are not acceptable for use in regulatory (permit) applications. On a case by case basis, flagpole receptors can be used for balconies and rooftops, or on elevated highway bridges where the plume is expected to directly impact the bridge, but only for model evaluation purposes. In addition, it is both the convention and the default mode to assume a height of zero meters to represent ambient air.

3. Elevated Terrain
The dispersion model will accept terrain elevations for receptors where the modeler has determined the terrain will have an effect. The topography in the area of Madison-Kipp Corp. (MK) is very gently rolling, and the terrain adjustments within the dispersion model are designed to simulate the flow of air around hills and through valleys. The slight changes in terrain (Lowell School is 10-15' above MK) surrounding MK do not have an effect on the flow of air. The atmosphere will adjust to the surface for these elevations, such that what is emitted at ten feet above the ground will still be at ten feet above the ground as the air travels over this terrain. While the model can accept such low terrain heights, it is not proper use of the model, and could be considered 'gaming' the model.

4. Building Cavity Zone
Downwind of any building is a region where the air is temporarily trapped and will recirculate in a very turbulent fashion. This is called the cavity zone. The standard gaussian plume equations are not valid in this region, and due to the increased turbulence, it is difficult to accurately predict concentrations. The dispersion model currently determines the distance from the source to the edge of the cavity zone to be three times the lesser of the building height or width, and will not compute concentrations within this region for the individual source. Based upon the facility plot plan, the only sources with a potential cavity off property are the furnace stacks. Using the SCREEN3 model, with sixty-foot stacks and forty-foot buildings, the effluents from these stacks is above the cavity so the effluents are not captured in the cavity at all. Therefore, the discussion of cavity effects is irrelevant. In addition, since the ISC-PRIME model is only proposed at this time, we can not use it in a regulatory analysis. Currently, USEPA is reviewing the comments received about the revised guideline models, and there is no indication when the final model will be promulgated.

5. Roof Vents
In the modeling analysis, the sources that can emit pollution are modeled. The most recent data from MK indicate that the roof vent stacks have a vertical, unobstructed discharge. There may be other vents upon the roof, but the company indicates that these do not emit pollution. The stack parameters will be part of the permit, so if any stack is found to be obstructed when it is not supposed to be, then one or more permit conditions will be violated, and action will be taken by DNR.

COMPLIANCE WITH ENVIRONMENTAL JUSTICE PROGRAM

Comment – Due to the composition of population in the area surrounding Madison-Kipp Corp., it is likely that the Environmental Justice Program "Federal Actions To Address Environmental Injustice In Minority Populations And Low Income Populations" will apply to the pending air pollution control permits. Title VI reads: "No person in the United States shall, based on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

Response – DNR's issuance of a minor source construction permit to Madison-Kipp is not a federal action and is not covered under President Clinton's Executive Order on Environmental Justice. It is not entirely clear that the Madison-Kipp permit is an environmental justice or a Title VI issue, which is usually defined as: a low income/minority community, excluded from environmental decision making and subject to a

disproportionate impact from one or more environmental hazards, who experience a disparate implementation of environmental regulations. DNR is committed to the principle that all citizens receive the benefits of a clean, healthy and sustainable environment regardless of race, national origin, or income. DNR seeks broad public involvement in its regulatory development and in its permitting actions, both from minority and low income populations and from the majority population. DNR has not denied participation to any group and we believe that the state's air pollution laws have been applied equally and fairly in this instance.

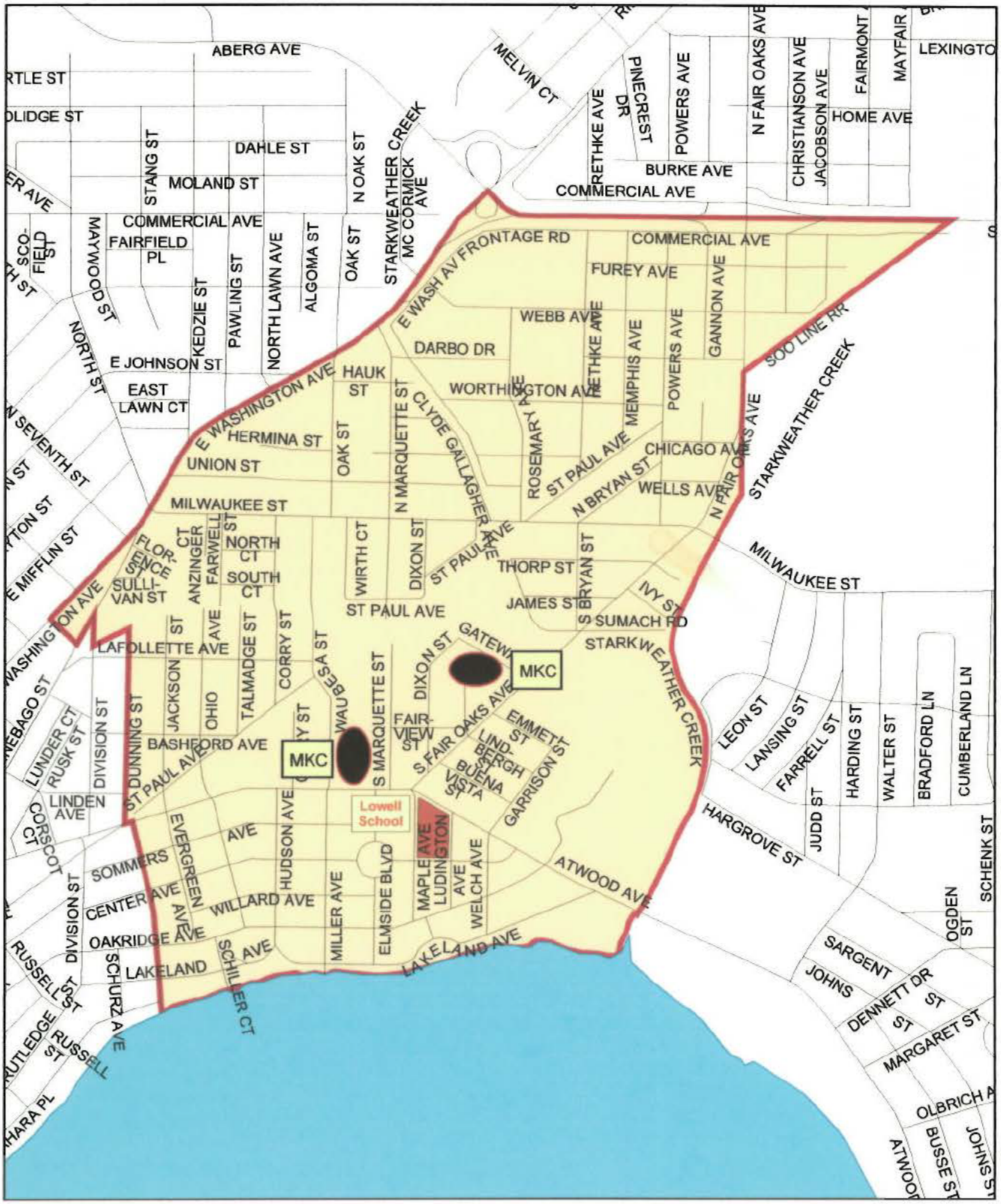
cc: Marcia Penner – LS/5
Thomas Roushar – SCR
USEPA Region V
DNR Bureau of Air Management, Keith Pierce/Jeff Hanson – AM/7
Clean Air Madison c/o Jim Powell
City of Madison Health Dept. c/o John Hausbeck
Shenk-Atwood-Starkweather-Yahara Neighborhood Association c/o Dan Melton
State Rep. Mark Miller

Attachment F
Lowell Elementary School Location

Lowell Elementary

401 Maple Street
Madison, WI 53704
(608) 204-6600

The Madison School District assumes no legal liability for the accuracy, completeness, or usefulness of any of the information contained on this map.



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